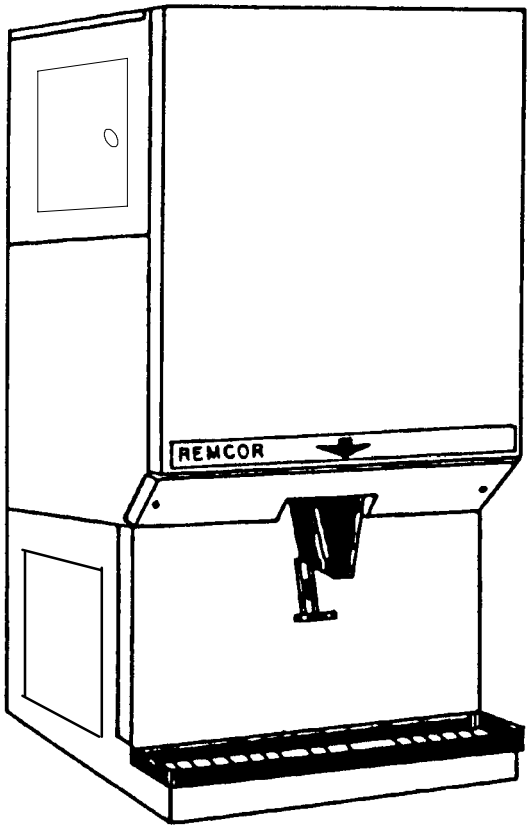
REMCOR®

SPIRAL ICEMAKER DISPENSER

MODELS: SID650A/80
SID650A/80-B
SID650A/80-BC
SID650W/80
SID650W/80-B
SID650W/80-BC
220V, 60HZ, 1PH

Operator's Manual



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WWW.IceCubes.NET
WWW.CorneliusParts.COM
(866) 423-6253
623-869-8881

Part No. 91704
August, 1995

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION
This Manual must be read and understood before installing or operating this equipment

REMCOR INC: 1995

PRINTED IN U.S.A

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GENERAL INFORMATION

DESCRIPTION

The Remcor S.I.D. (Spiral Ice Maker/Dispenser) is a unique, self-contained, counter top style unit that automatically makes hard, clear cube quality ice and stores it in a sealed hopper for sanitary dispensing. The ice is made by a new, patented process on a spiral-shaped, stainless steel evaporator and produces true cube quality ice on the outside of the tubes. There are no augers; no compressing of flaked ice; no bearings; and no high gear motor loads in the ice-making process. The unit has been designed to be simple, yet effective, to provide many years of trouble-free operation.

Table 1. SPECIFICATIONS

Compressor:	3/4 Horsepower
Refrigerant:	R-502 / 2 lbs. (Air Cooled); 2-1/4 lbs. (Water Cooled)
Voltage:	220/1/60
AMPS:	15
Circuit Ampacity:	20
Fuse Size:	20A Time-Delay
Ice Storage Capacity:	80 lbs.
Ice Making Capacity:	Up to 750 lbs./24 Hours
Shipping Weight:	350 lbs.

Table 2. LBS./24-HOUR ICE PRODUCTION

Air Temp.	**Water Temperature**					
	40°	**50°**	**60°**	**70°**	**80°**	**90°**
60°	750	704	663	627	594	564
70°	682	650	607	580	550	520
80°	625	586	552	522	495	470
90°	565	530	499	472	447	425

INSTALLATION INSTRUCTIONS

UNPACKING INSTRUCTIONS

1. With the unit upright, carefully remove the shipping crate. Inspect for shipping damage and report any such damage to the shipper immediately.

2. Unlock and open the hinged service door on the upper left side panel.

3. Remove shipping tape from the ice drop cover, storage hopper cover, water float valve and agitator in the storage hopper.

4. Remove shipping tape from air inlet filter and sink grill.

INSTALLATION INSTRUCTIONS

NOTE: A Cornelius Model XXXX water filter(or equal) ice maker quality water treatment unit MUST BE INSTALLED in the water supply line to the ice maker. Failure to do so may result in poor quality ice, low production output, and may cause premature failure of the ice maker evaporator and void the extended evaporator warranty.

This ice maker is provided with a stainless steel evaporator designed to last the life of the product. But, some of the chemicals in treated and untreated water, specifically chlorine and sulphur (sulphide), have the ability to attack stainless steel and cause premature failure. An initial investment in proper water treatment will pay for itself in increased production, quality and long life of the product.

1. Location

   Locate the ice maker/dispenser indoors in a well-ventilated area. Avoid exposure to direct sunlight and/or heat caused by radiation.

   Ambient room temperature must be in the range of 60° to 90° F. Do not install unit in an enclosed area where heat build up could be a problem. For proper airflow for the refrigeration system, allow a 6 clearance at the back of the unit and a 12 clearance at the right side panel.

   Consult Figure 1 for utility connection location.

   Consult Figure 2 for dimensions for mounting the unit to the counter with the hardware provided. **Note that the unit must be level for proper operation.**

   The unit must be sealed to the counter. The mounting template drawing (Figure 2) indicated the openings which must be cut in the counter. Locate the desired position for the unit, then mark the outline dimensions and cut-out locations using the template drawing. Cut openings in counter.

   Apply a continuous bead of NSF *International* (NSF) listed silastic sealant (Dow 732 or equal) approximately 1/4_ inside of the unit outline dimensions and around all openings. Then position the unit on the counter within the outline dimensions. All excess sealant must be wiped away.

2. Plumbing

   Connect the ice maker to a cold, potable water source suitable for drinking. Do not install the unit on a water softener line. It is recommended that a hand shut-off valve and strainer be used on the incoming supply line. A 1/4_ outside diameter compression tube fitting is provided at the back of the unit for the water supply hook up (See Figure 1). For proper operation, the incoming water supply pressure must be in the range of 30−90 PSIG. Install a pressure regulating valve if above this range.

IMPORTANT: To ensure proper ice maker operation and also to reduce the frequency of water-related service problems, a water filter should be installed. Remcor recommends the use of IMI Cornelius filter, model number 81COR01PS.

For specific recommendations on these filter systems for your local conditions, consult with a distributor in your area or contact the filter manufacturer.

Connect two (2) 3/4_ IPS (or equal) drain lines to the 3/4_ threaded drain connections at the lower rear of the unit. These lines must pitch downward to an open drain and must contain no traps or improper drainage will result.

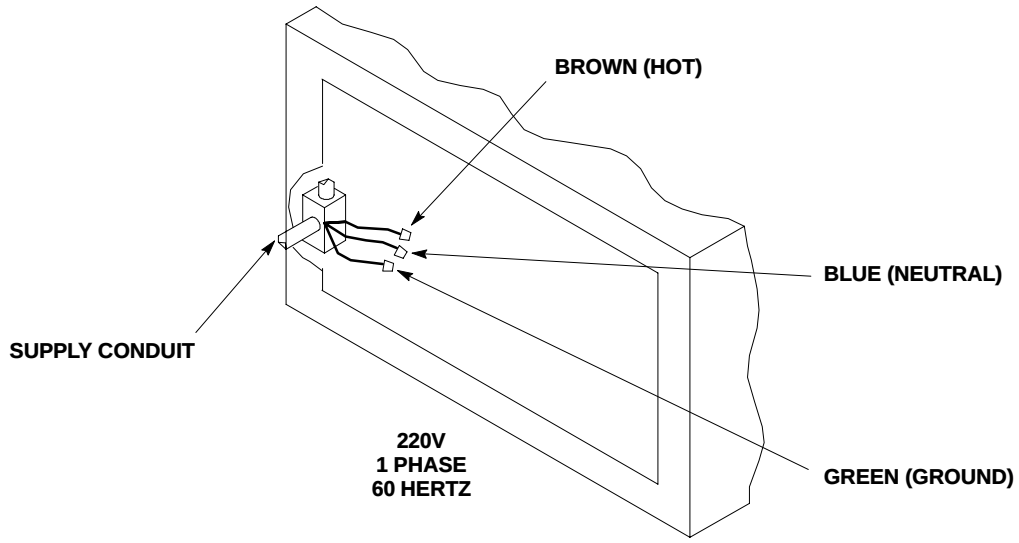
NOTE: In areas where consistently warm water temperatures are encountered, the use of a Remcor Pre-Cooler in the water line is recommended to maximize the ice production of this unit. Contact Remcor for more information on this product.

3. Electrical

   A 4 x 2 junction box is located at the rear of the unit for the supply hook-up. Connect the ice maker to its own individual circuit per the national electric code and local code. See SPECIFICATIONS for ampacity and fuse size.

IMPORTANT: The wire size must be adequate for the ampacity rating, and the supply voltage must be within a range of ± 10% for proper ice maker operation.

NOTE: The units require a 2 wire system plus earth ground for proper operations.



REAR VIEW – BOTTOM SECTION SERVICE PANEL REMOVED

FIGURE 1. ELECTRICAL WIRING INSTALLATION INSTRUCTIONS

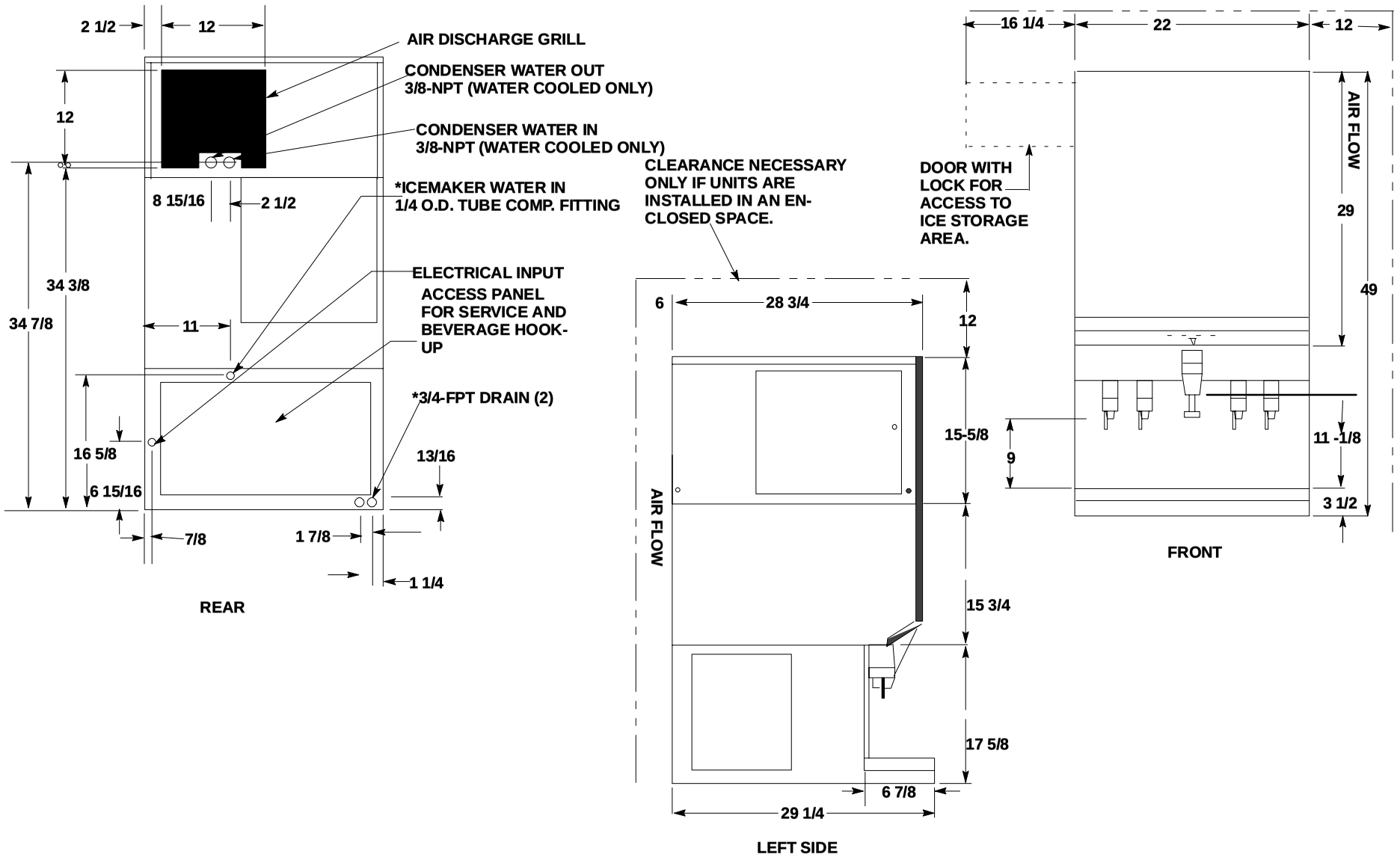
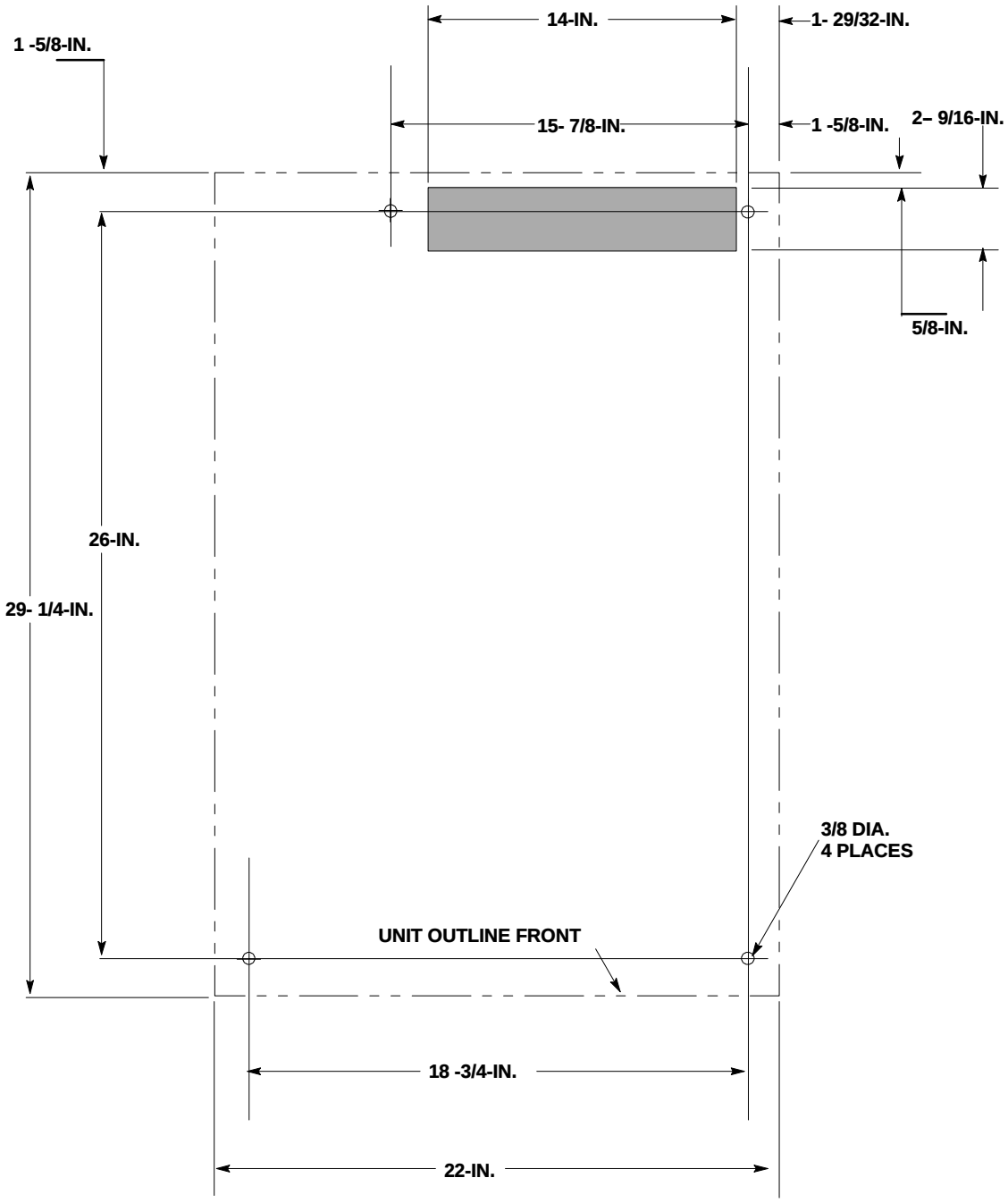


FIGURE 2. INSTALLATIONS DIMENSIONS



NOTE: SHADED AREA INDICATES OPENING IN CABINET BOTTOM FOR BEVERAGE TUBING FOR –B, –BC MODELS ONLY

FIGURE 3. MOUNTING TEMPLATE MODEL SID650-80

BEVERAGE SYSTEM

"B" models contain beverage faucets only and must be supplied with cold product from any remote cold plate or refrigerated soda factory. "BC" units have a built-in cold plate, in addition to the beverage faucets and are designed to be supplied direct from syrup tanks and carbonator with no additional cooling required.

Installation

1. Locate the required openings in the counter top for the beverage lines as shown in Figure 3.
2. For "B" models, carefully pull the beverage tubes through the bottom opening in the unit and through the clearance opening in the counter.
3. For "BC" models, tube fittings are provided at the rear of the unit on the cold plate for syrup and water line hook-up respectively.
4. Connect the beverage system product lines as indicated in Figure 3 ("B" units) and Figure 4 ("BC" units). This work should be done by a qualified service person. Note that the hoses are marked with numbers (1 through 6) for syrup connection and "CW" for carbonated water connection.

START-UP

1. Open the hinged service door on the upper left side panel. Remove ice drop cover and storage hopper cover.
2. Turn on water to ice maker. Make sure that the proper water level is attained in the float chamber before starting unit.
3. Depress the flush switch for 30 seconds to verify that the water dump valve operates and that the water drain lines are open and not plugged.

WARNING: To prevent possible injury, do not stick fingers or hand into ice maker nozzle or hopper with power applied to unit.

4. Put the "Stop/Run" switch in the "run" position. Observe that the ice maker goes through proper ice making and harvest cycles. If unit malfunctions, consult the **Troubleshooting Guide.**

NOTE: Due to meltage loss because of a warm storage hopper, it will take longer to fill the hopper the first time than when the ice maker has been operating continuously.

5. Depress the vend switch lever. Check that both the gate solenoid and agitator motor are energized simultaneously to lift the gate slide and rotate the agitator in the storage hopper, respectively. If either component malfunctions, consult the **Troubleshooting Guide.** Replace the ice drop and hopper covers.
6. For beverage units, start up the beverage system and adjust the faucets to the proper brix. Contact your local syrup distributor for complete information on the beverage system. For units with a build-in cold plate, it will take approximately one (1) hour from initial machine start-up for cold plate to be at full capacity.
7. The bin thermostat is calibrated at an atmospheric pressure equivalent at 500 feet above sea level. For locations at higher elevations, it may be necessary to re-adjust these controls. Consult the **Maintenance/ Adjustment Procedures** section.

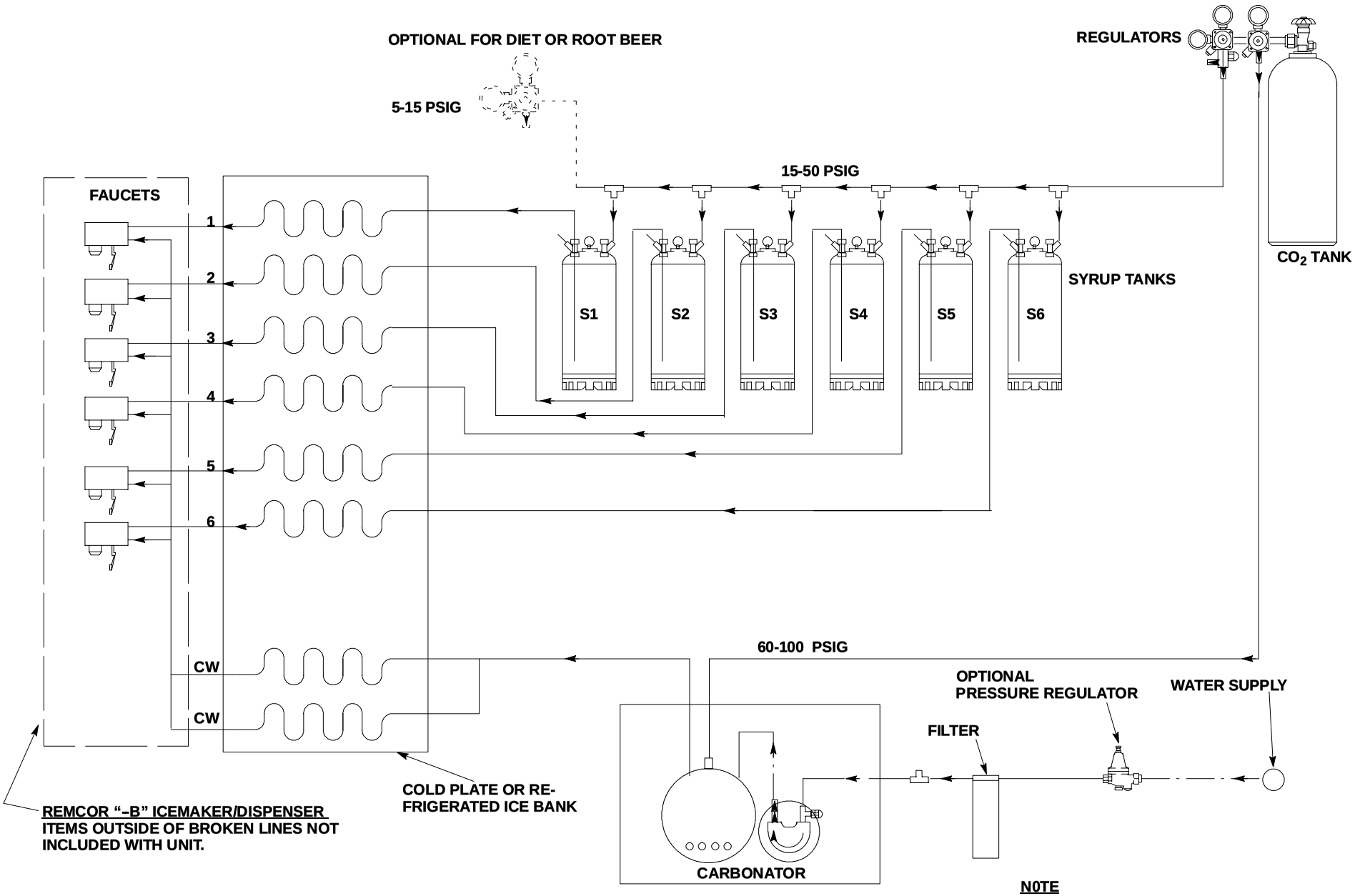


FIGURE 4. BEVERAGE SYSTEM SCHEMATIC B MODELS

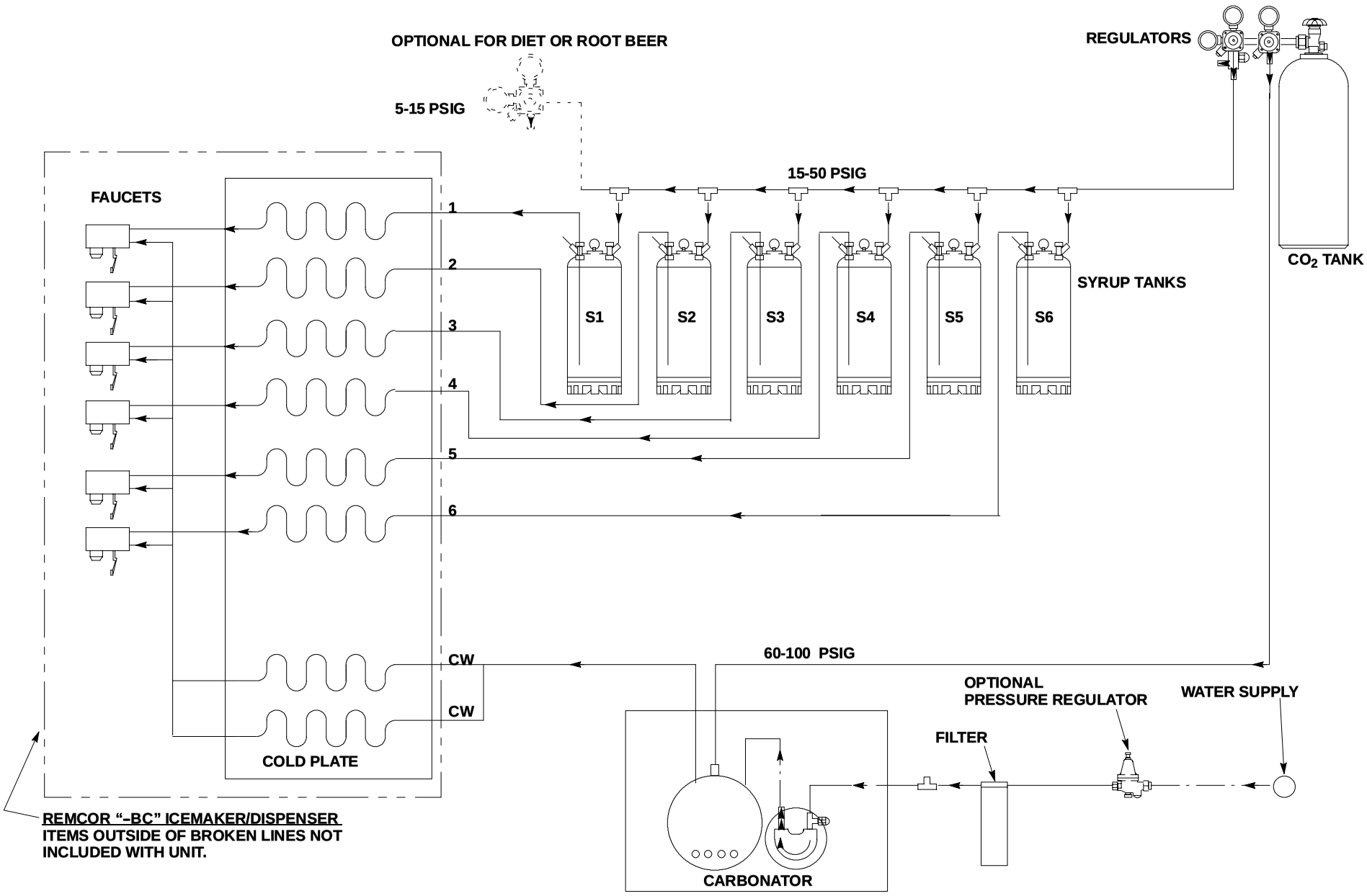


FIGURE 5. BEVERAGE SYSTEM SCHEMATIC "BC" MODELS

NOTE:
FOR REFERENCE ONLY – NOT FOR CONSTRUCTION.

OPERATING INSTRUCTIONS

A temperature sensing control bulb located in the storage hopper starts and stops the ice-making process in response to ice level in the hopper. With this ice level control "calling" for ice (hopper ice level is low), ice begins to form on the stainless steel tubing coils in the evaporator section of the ice-maker. Ice continues to "grow" on the evaporator coil until it contacts the ice thickness probe (low voltage conductivity sensor). At this point, the conductivity probe triggers the harvest timer motor. The harvest timer contains five (5) cam operated switches which function as detailed in the following table.

Table 3. HARVEST CYCLE

Time	Cam Switch	Action
0–86 Seconds	#1	Timer motor energized.
1–23 Seconds	#4	Water dump valve open.
1–36 Seconds	#2	Hot gas solenoid valve open. Air pump off. Condenser fan motor off.
36–90 Seconds	#2	Air pump on. Condenser fan motor on. Hot gas solenoid valve closed.
35–60 Seconds	#3	Harvest motor on.
44–48 Seconds	#5	Hopper agitator motor operates.

When ice contacts the ice lever control bulb in the storage hopper, the control will shut down the refrigeration system. If this signal occurs during the harvest cycle, the harvest cycle will be completed before shutdown occurs.

To dispense ice, push the lever located on the lower front panel. Ice will flow from the ice chute until the lever is released.

For units with a built-in cold plate, ice will automatically fill the cold plate cabinet. Allow one (1) hour for the cold plate to reach its maximum capacity. Start up the beverage system and adjust the faucets to the proper brix. Pushing the lever on any faucet will provide beverage of the appropriate flavor.

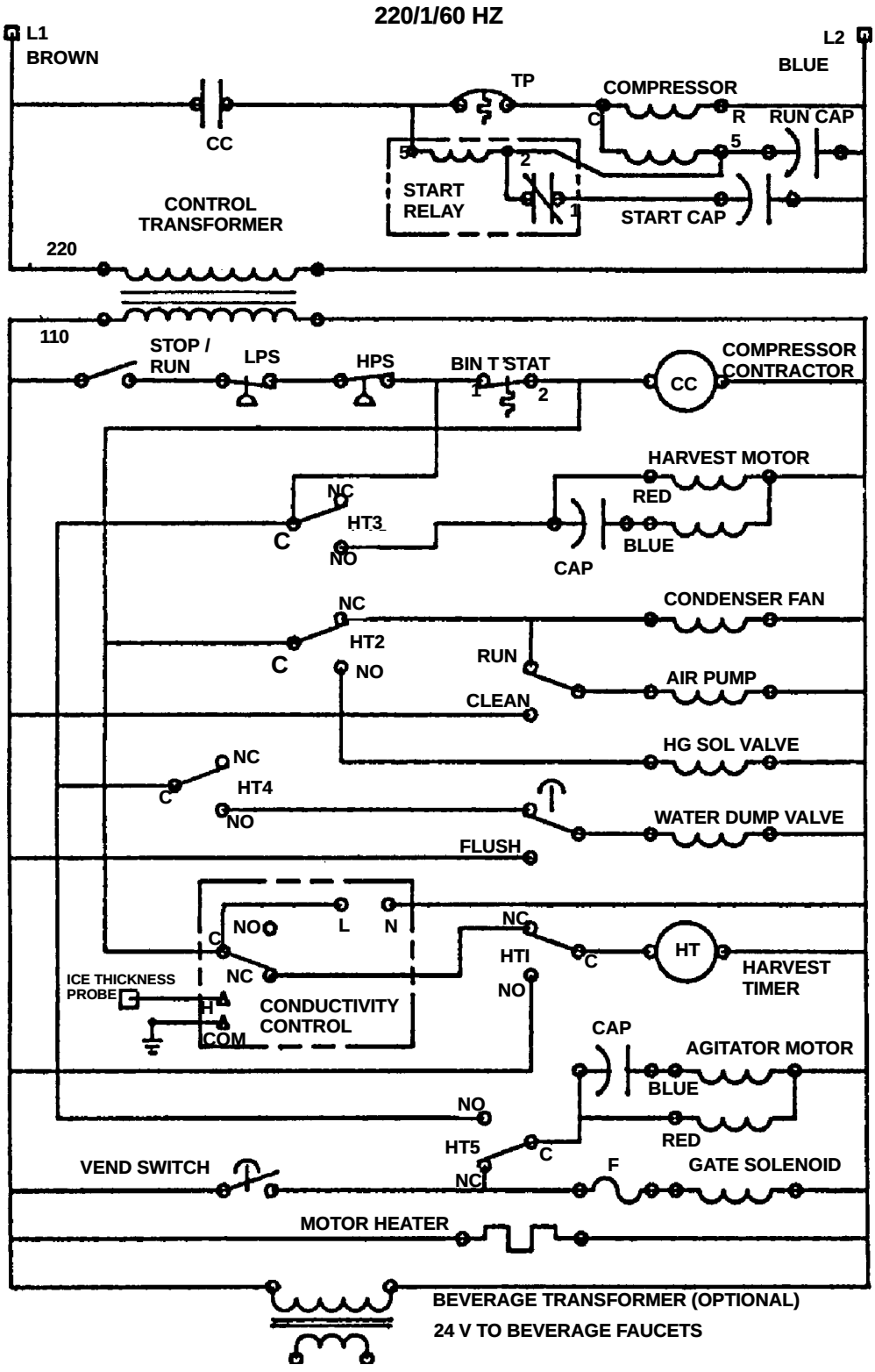


FIGURE 6. WIRING SCHEMATIC

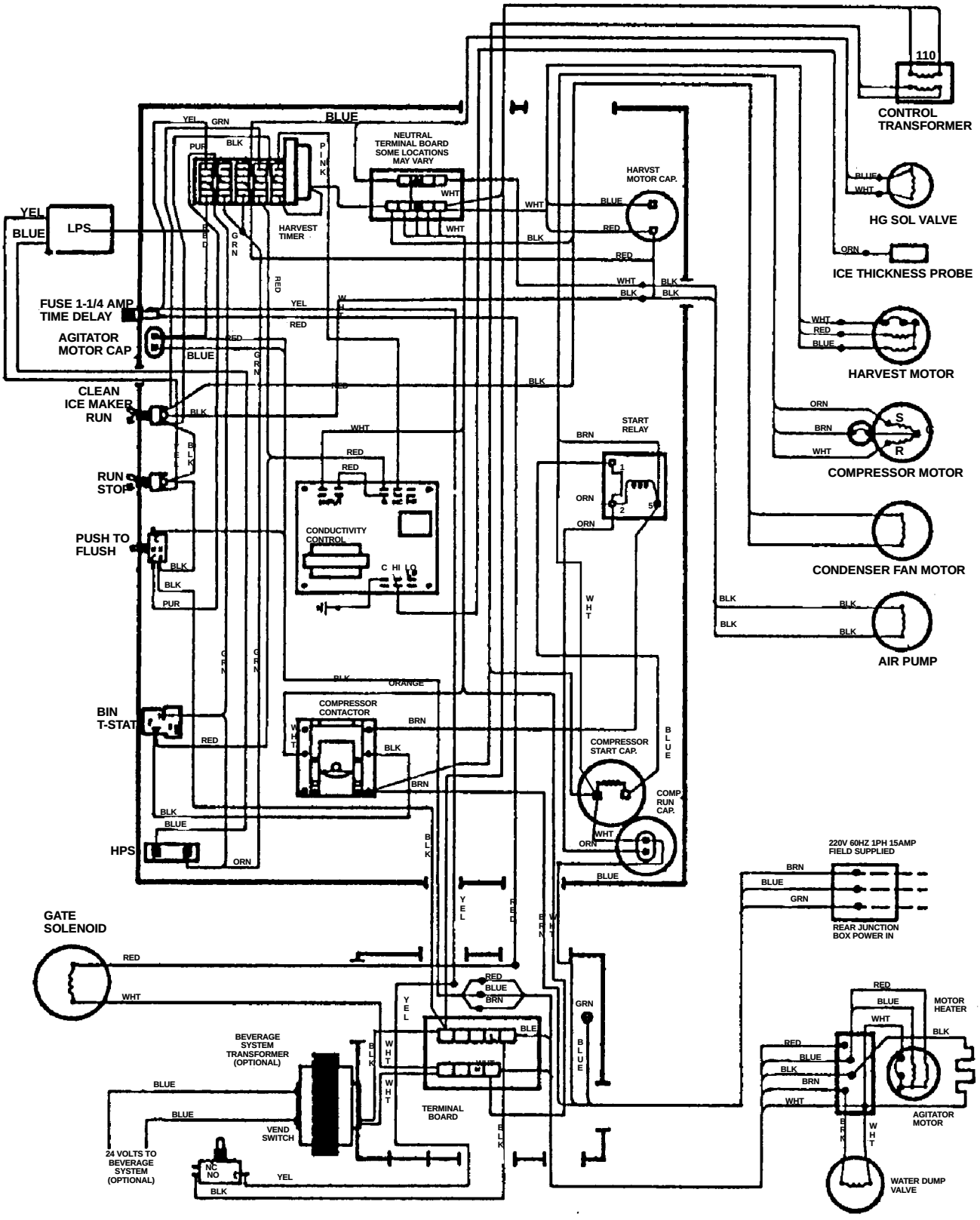


FIGURE 7. WIRING DIAGRAM

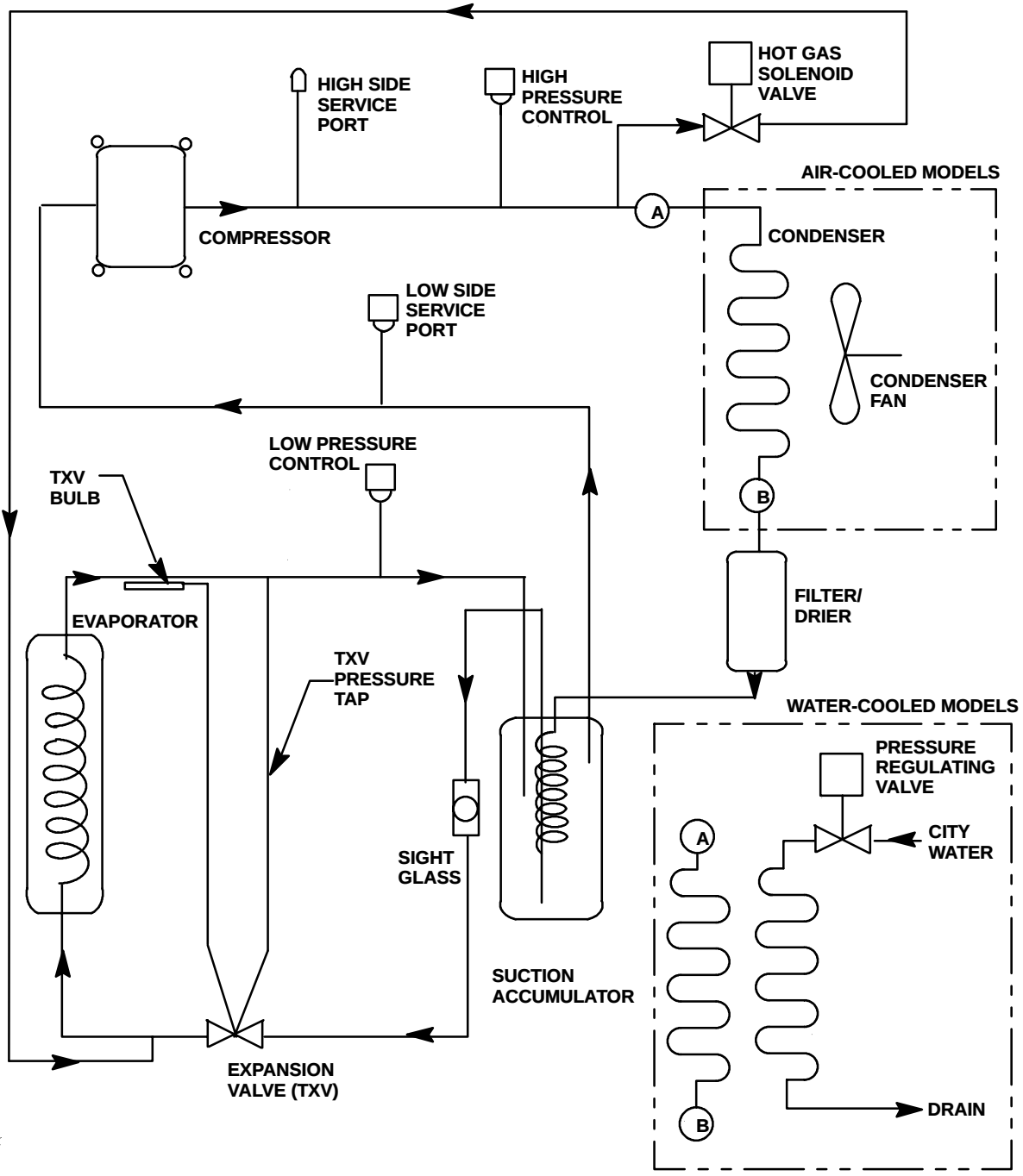


FIGURE 8. REFRIGERATION SCHEMATIC

MAINTENANCE

REGULAR BASIS (or as required)

Cleaning of the ice maker is recommended on a regular basis not only for sanitary reasons, but also to maintain the performance of the unit. Build-up of line and scale can hinder ice-making production rates and interfere with proper dispensing of the ice. See **Cleaning Instructions** for the recommended procedure.

EVERY THREE MONTHS (or as required)

It is recommended that the air inlet filter be cleaned every three (3) months or sooner depending on the operating environment for proper refrigeration system performance. On an air-cooled unit, also check that the condenser is free of dirt/foreign material that could cause air flow blockage. Consult the **Maintenance/Adjustment Procedures** section for cleaning these items.

PERIODICALLY (or as required)

Check the vending area sink for proper water drainage. Remove any foreign material from the sink to prevent drain blockage.

CLEANING INSTRUCTIONS

IMPORTANT: The ice maker should be cleaned at a minimum of three (3) month intervals or more frequently, depending on local water conditions. The storage hopper interior should be cleaned once a month.

CAUTION: Do not use metal scrapers, sharp objects or abrasives on the surface of the storage hopper, as damage may result. Do not use solvents or other cleaning agents, as they may attack the plastic surface. Use only the recommended chemicals and solutions for both the ice maker and hopper.

Ice Maker Section

1. Open the hinged service door on the upper left side panel.
2. Put the "Stop/Run" switch in the "stop" position at the end of the harvest cycle. An alternate method would be to stop the unit during the ice-making cycle and allow ice in the evaporator to melt by waiting for at least 1 hour before beginning the cleaning procedure. The "Flush" switch can be depressed to bring in warmer water to help the melting process.

WARNING: The unit is still plugged into the electrical power during the ice maker section cleaning. To avoid possible injury, do not reach into hopper, or into ice maker nozzle. Do not contact exposed electrical wiring or components.

3. Close the water supply valve to the ice maker.
4. Remove the ice drop cover from the evaporator and the storage hopper cover.
5. Seal the evaporator outlet with the plastic plug provided with the unit and replace the ice drop cover.

6. Move the water float valve reservoir to the "Clean" position by lifting slightly and pulling forward to raise the reservoir to the upper mounting screws.

7. Remove the float valve cover and add 4 ounces of Virginia Ice Machine Cleaner to the reservoir.

CAUTION: Virginia Ice Machine Cleaner is a mild acid, therefore normal care should be taken when using. Keep out of eyes and cuts. Read warnings on package before using. Do not operate unit in the cleaning mode without the ice drop cover in place. There may be some overflow of cleaning solution through the evaporator vent tube during the cleaning cycle.

8. Open the water supply valve and fill evaporator with water (level is up in float reservoir).

9. Put the "Clean/Run" switch in the "clean" position. Allow unit to run in the cleaning mode for at least 30 minutes.

10. Put the "Clean/Run" switch in the "run" position.

11. Close the water supply valve.

12. Depress the "Flush" switch push button and drain evaporator for about 1-1/2 minutes. Release push button. Open the water supply valve. Allow evaporator to refill with water. Repeat Steps 11 and 12 three (3) times to thoroughly remove cleaning solution from evaporator.

13. Close the water supply valve. Depress the "Flush" switch push button for 1-1/2 minutes to drain the evaporator.

14. Lower the float valve reservoir to "Run" position. Remove the evaporator plug.

15. Open the water supply valve and fill the evaporator with water.

16. Put the "Stop/Run" switch in the "run" position and allow unit to run through at least three (3) complete ice making cycles or until ice is free of "sweet" taste.

WARNING: If unit fails to harvest ice, put the "Stop/Run" switch in the "stop" position. Close the water supply valve. Depress the "Flush" switch push button for 1-1/2 minutes to drain the evaporator. Flush the evaporator with hot water to thoroughly melt all the ice in the evaporator. Repeat Step 12 to remove all traces of the cleaning solution from the evaporator.

17. Dispense all ice out of storage hopper and discard.

Dispenser Section

1. Turn off the main electrical power supply to thr machine.

2. Remove the agitator assembly from storage hopper and wash and rinse it thoroughly.

3. Wash down all inside surfaces of the ice storage area, including the top cover and ice drop cover with a mild detergent solution and rinse thoroughly to remove all traces of detergent.

4. Replace the agitator.

5. Remove ice chute cover as follows:

   A. Flex sides outward to disengage lower pins.

   B. Lift ice chute cover to disengage upper pins.

   C. Lower Ice Chute cover down out of unit. **Note: It may be helpful to twist cover slightly.**

6. Clean the inside of the ice chute, and ice chute cover with a mild detergent solution and rinse thoroughly to remove all traces of detergent.

7. Reverse steps above to reassemble ice chute.
8. Sanitize the inside of the hopper agitator, ice chute, the hopper cover and ice drop cover with a solution of 1 ounce of household bleach to 2 gallons of water. (200 PPM)
9. Replace the hopper cover and ice drop cover. Turn on the electrical power supply. The ice maker is ready for normal operation.

FOR UNITS WITH BEVERAGE SYSTEM

Cold Plate

1. Carefully remove the lower front panel.
2. Remove cold plate cover by loosening thumbscrew on the ice drop chute and lowering chute from plastic drop tube. Then, remove cover by lifting slightly in front and slide forward.
3. Remove any debris from the drain trough and spring. Check that drain hole is not clogged.
4. Wash down the inside of the cold plate, tray and cover with a mild detergent solution and rinse. A small, long handled brush will be found helpful in reaching the corners.
5. Replace the cover, taking care that it is securely positioned in the cold plate tray.
6. Replace the ice drop chute.
7. Replace the lower front panel, carefully feeding the tubing and wires into the cabinet. Be sure not to pinch any tubing or wires between the panel and cabinet.

Beverage System

1. Remove faucet spouts, wash in mild detergent, rinse and replace.
2. Disconnect electrical power to the carbonator. Shut off the water supply and close the CO_2 regulator to the carbonator.
3. Disconnect the syrup tanks from the system.
4. Energize the beverage faucets to purge the remaining soda water in the system.
5. Use a clean 5 gallon tank for each of the following:

   Cleaning Tank: Fill with hot (120° - 140° F) potable water.

   Sanitizing Tank: Fill with a chlorine sanitizing solution in the strength of 1 ounce of household bleach(sodium hypochlorite) to 2 gallons of cold (ambient) potable water (200 PPM).

6. Repeat the following procedure on each of the units' syrup product lines:

   A. Connect the cleaning tank to the syrup line to be sanitized and to the CO_2 system.

   B. Energize the beverage faucet until the liquid dispensed is free of any syrup.

   C. Disconnect the cleaning tank and hook-up the sanitizing tank to the syrup line and CO_2 system.

   D. Energize the beverage faucet until the chlorine sanitizing solution is dispensed through the faucet. Flush at least 2 cups of liquid to ensure that the sanitizing solution has filled the entire length of the syrup lines. Allow the sanitizer to remain in the line for twenty (20) minutes.

   E. Disconnect the sanitizing tank. Hook-up the product tank to the syrup line and to the CO_2 system.

F. Energize the faucet to flush the sanitizing solution from the syrup line and faucet. Continue to draw on the faucet until only syrup is dispensed.

7. Repeat Step 2 in reverse order to turn on the carbonator. Dispense at least 1 cup of beverage from each faucet. Check taste. Continue to flush if needed, to obtain a satisfactory tasting drink.

TROUBLESHOOTING GUIDE

The following pages contain troubleshooting charts designed to aid an experienced service person in diagnosing any operating problem which may be experienced. It is assumed that normal service techniques and skills are familiar to the person doing the troubleshooting. In order to gain maximum benefit from these charts please note:

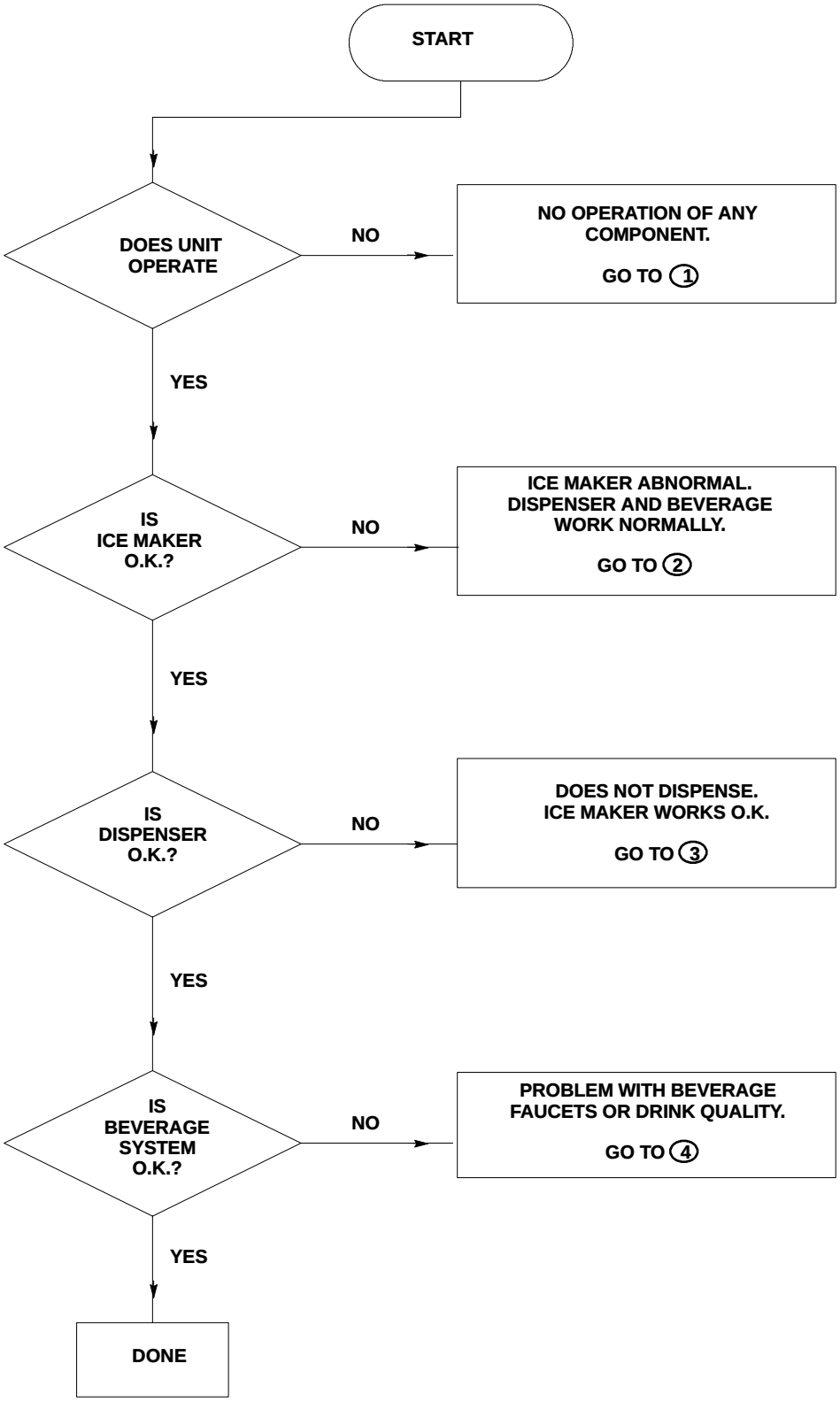
1. Start at the beginning of the chart and supply the appropriate answer to each question.

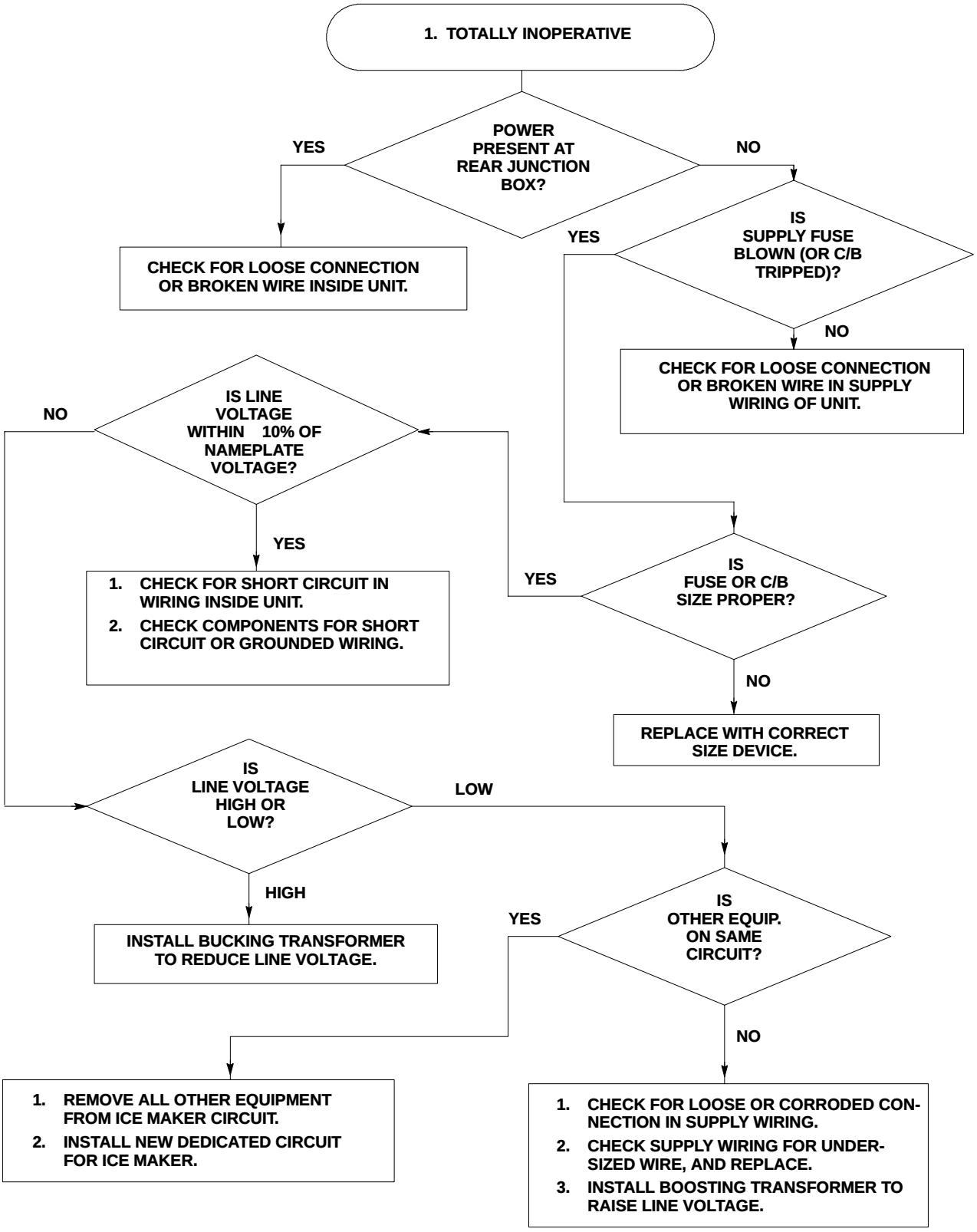
2. Do not skip any section, unless instructed to do so. You might miss the solution to your problem.

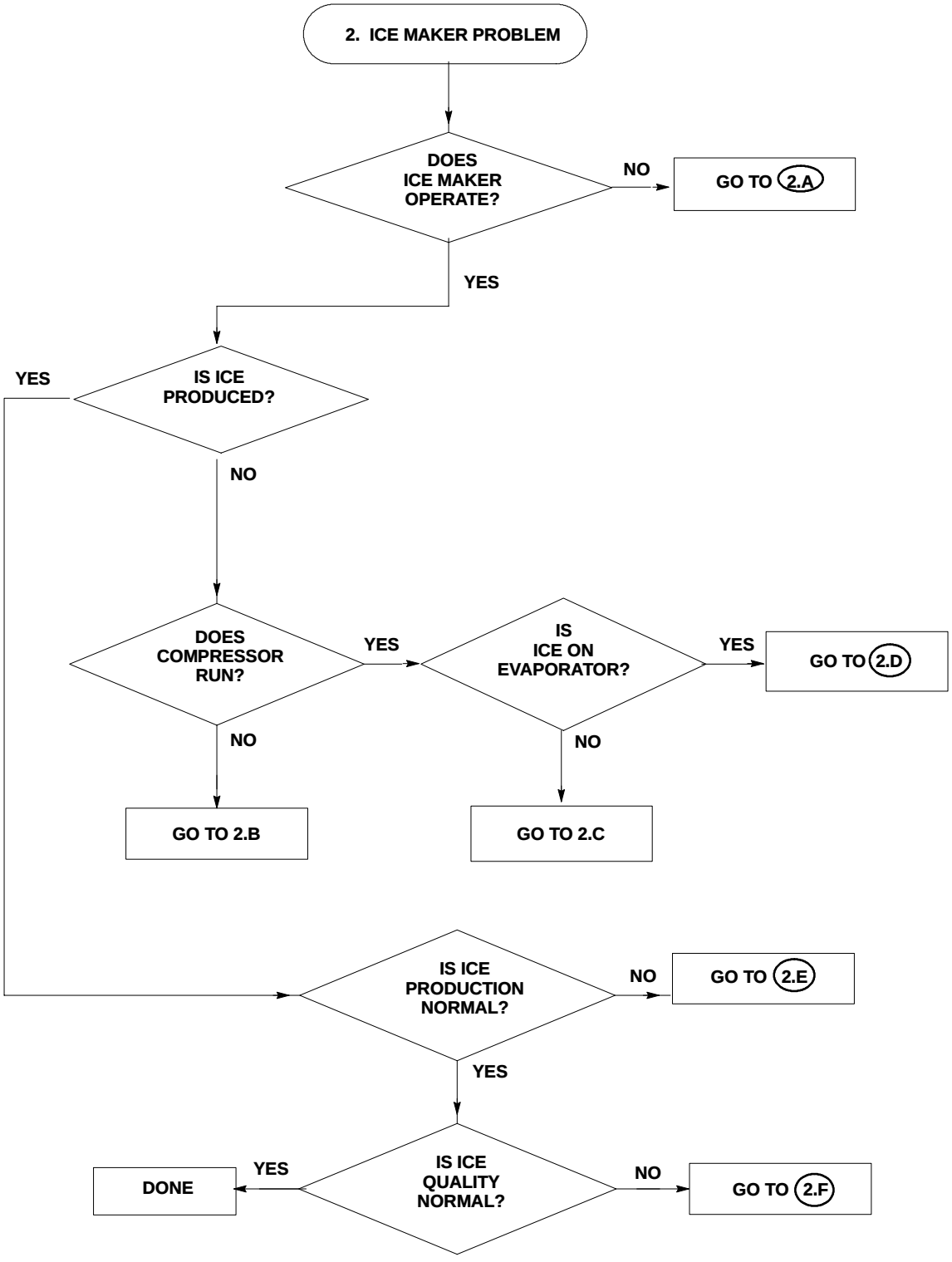
3. Evaluate the possible problem causes in the sequence in which they are presented. In general, they begin with the most likely (or easiest) to check and proceed to the least likely (or more complicated).

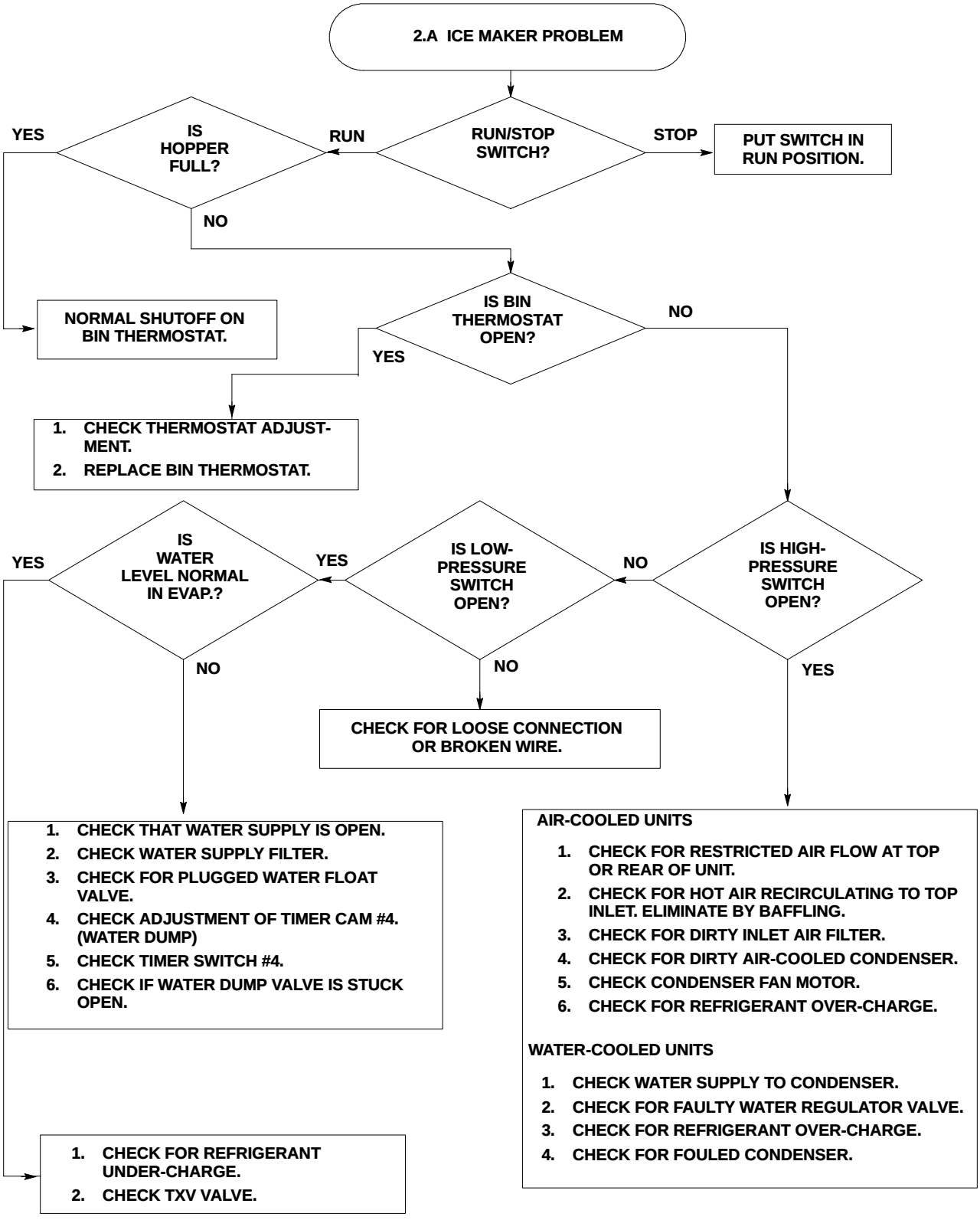
4. If after checking all indicated causes, the problem is not resolved, it is recommended that you re-try a second time, carefully evaluating the symptoms and modifying your answers as necessary.

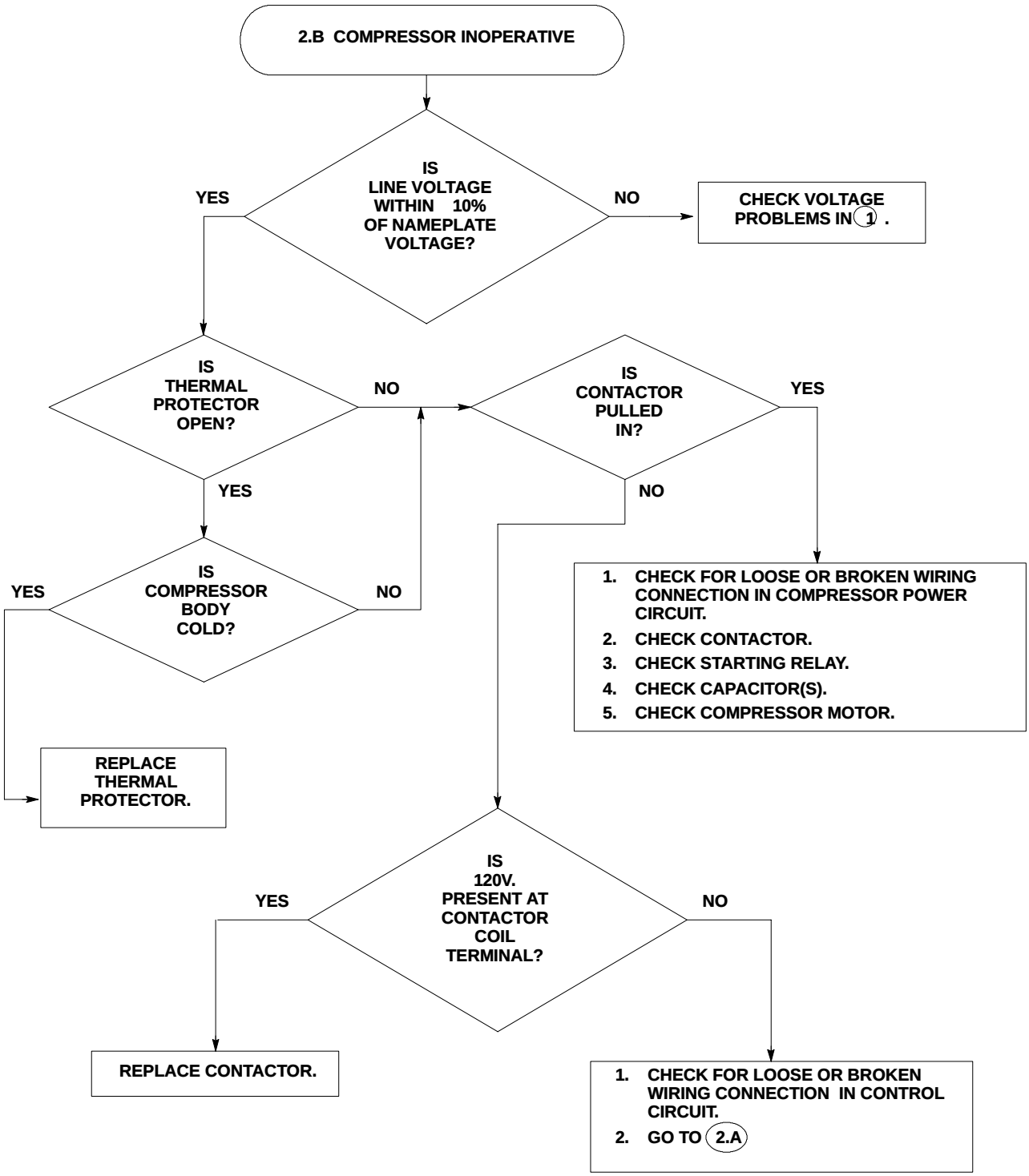
5. If you are unable to resolve a problem after several attempts, contact Remcor Customer Service for assistance.

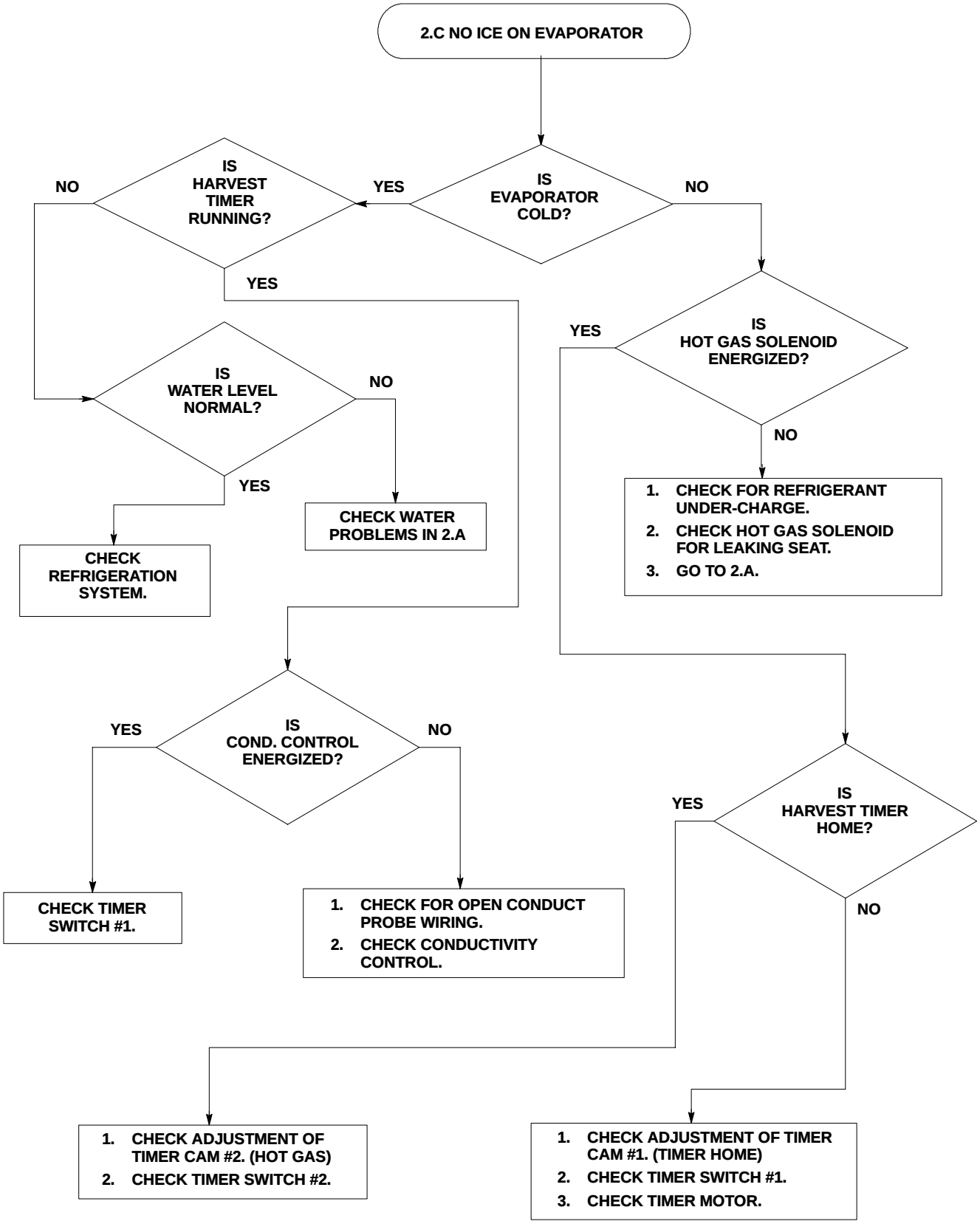

START
DOES UNIT OPERATE
NO
NO OPERATION OF ANY COMPONENT.
GO TO 1
YES
IS ICE MAKER O.K.?
NO
ICE MAKER ABNORMAL. DISPENSER AND BEVERAGE WORK NORMALLY.
GO TO 2
YES
IS DISPENSER O.K.?
NO
DOES NOT DISPENSE. ICE MAKER WORKS O.K.
GO TO 3
YES
IS BEVERAGE SYSTEM O.K.?
NO
PROBLEM WITH BEVERAGE FAUCETS OR DRINK QUALITY.
GO TO 4
YES
DONE

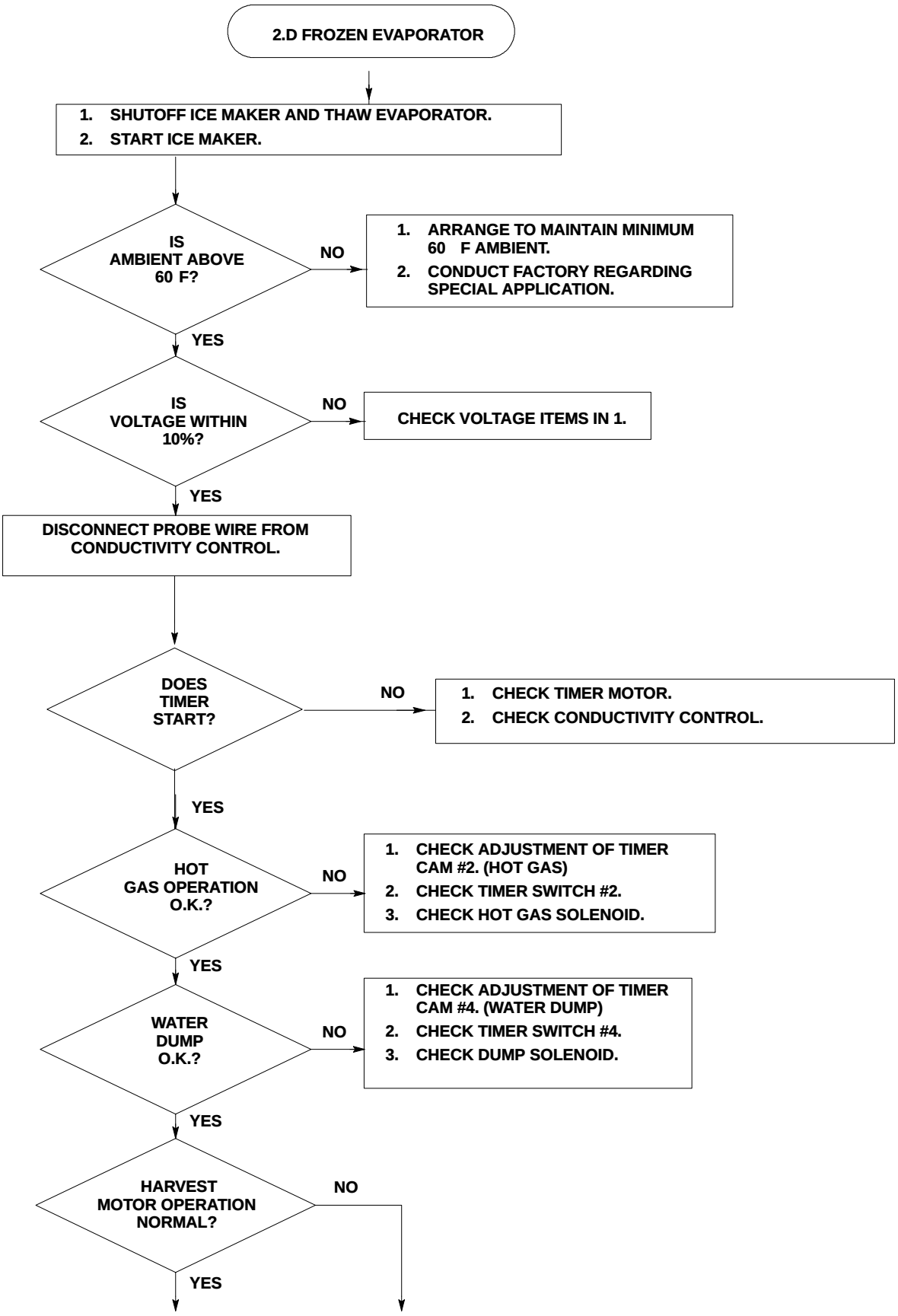

1. TOTALLY INOPERATIVE
POWER PRESENT AT REAR JUNCTION BOX?
YES
NO
CHECK FOR LOOSE CONNECTION OR BROKEN WIRE INSIDE UNIT.
IS SUPPLY FUSE BLOWN (OR C/B TRIPPED)?
YES
NO
CHECK FOR LOOSE CONNECTION OR BROKEN WIRE IN SUPPLY WIRING OF UNIT.
IS LINE VOLTAGE WITHIN 10% OF NAMEPLATE VOLTAGE?
NO
YES
1. CHECK FOR SHORT CIRCUIT IN WIRING INSIDE UNIT.
2. CHECK COMPONENTS FOR SHORT CIRCUIT OR GROUNDED WIRING.
IS FUSE OR C/B SIZE PROPER?
YES
NO
REPLACE WITH CORRECT SIZE DEVICE.
IS LINE VOLTAGE HIGH OR LOW?
LOW
HIGH
INSTALL BUCKING TRANSFORMER TO REDUCE LINE VOLTAGE.
IS OTHER EQUIP. ON SAME CIRCUIT?
YES
NO
1. REMOVE ALL OTHER EQUIPMENT FROM ICE MAKER CIRCUIT.
2. INSTALL NEW DEDICATED CIRCUIT FOR ICE MAKER.
1. CHECK FOR LOOSE OR CORRODED CONNECTION IN SUPPLY WIRING.
2. CHECK SUPPLY WIRING FOR UNDER-SIZED WIRE, AND REPLACE.
3. INSTALL BOOSTING TRANSFORMER TO RAISE LINE VOLTAGE.

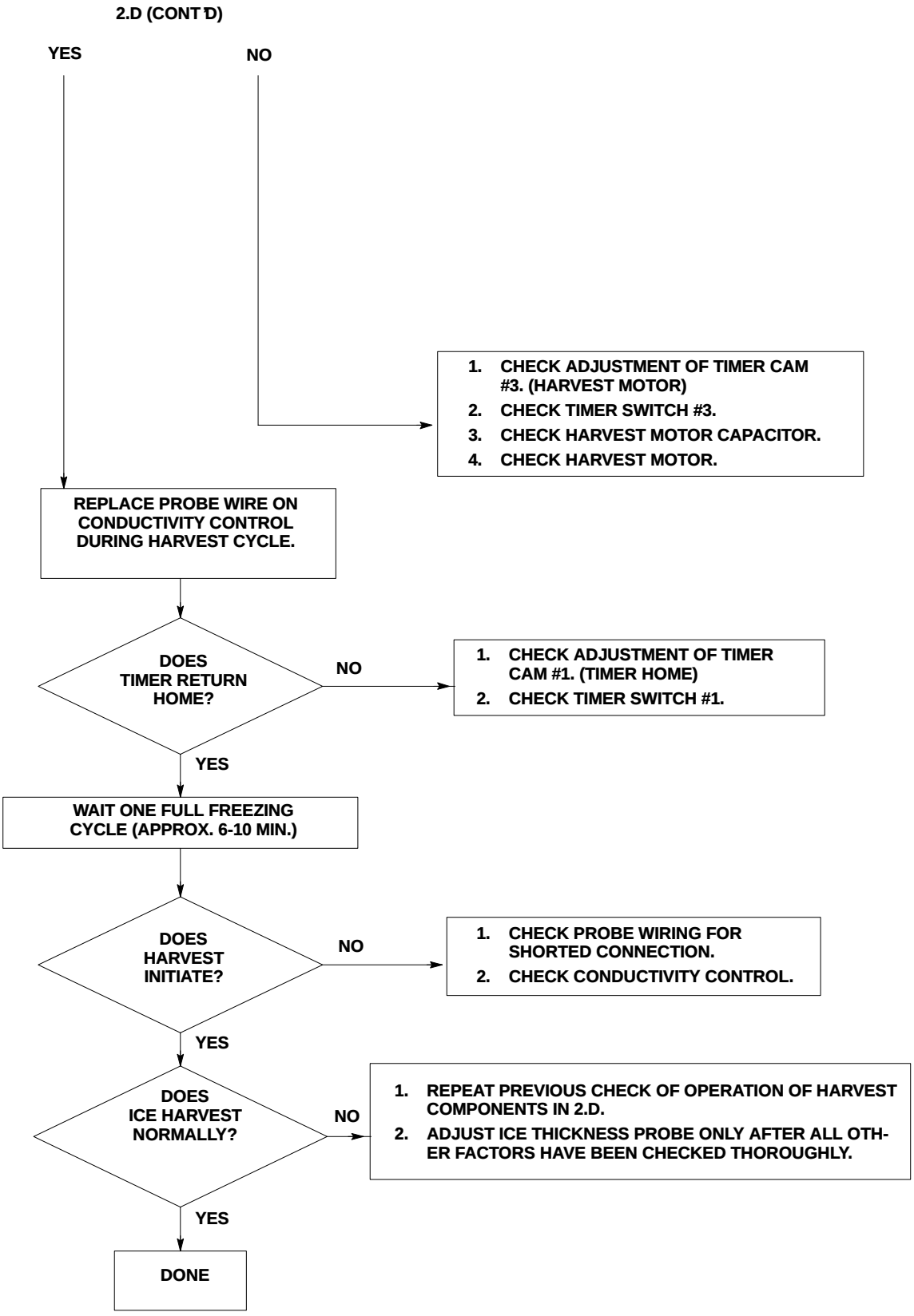

2. ICE MAKER PROBLEM
DOES ICE MAKER OPERATE?
NO
GO TO 2.A
YES
IS ICE PRODUCED?
YES
NO
DOES COMPRESSOR RUN?
YES
IS ICE ON EVAPORATOR?
YES
GO TO 2.D
NO
NO
GO TO 2.B
GO TO 2.C
IS ICE PRODUCTION NORMAL?
NO
GO TO 2.E
YES
IS ICE QUALITY NORMAL?
YES
DONE
NO
GO TO 2.F

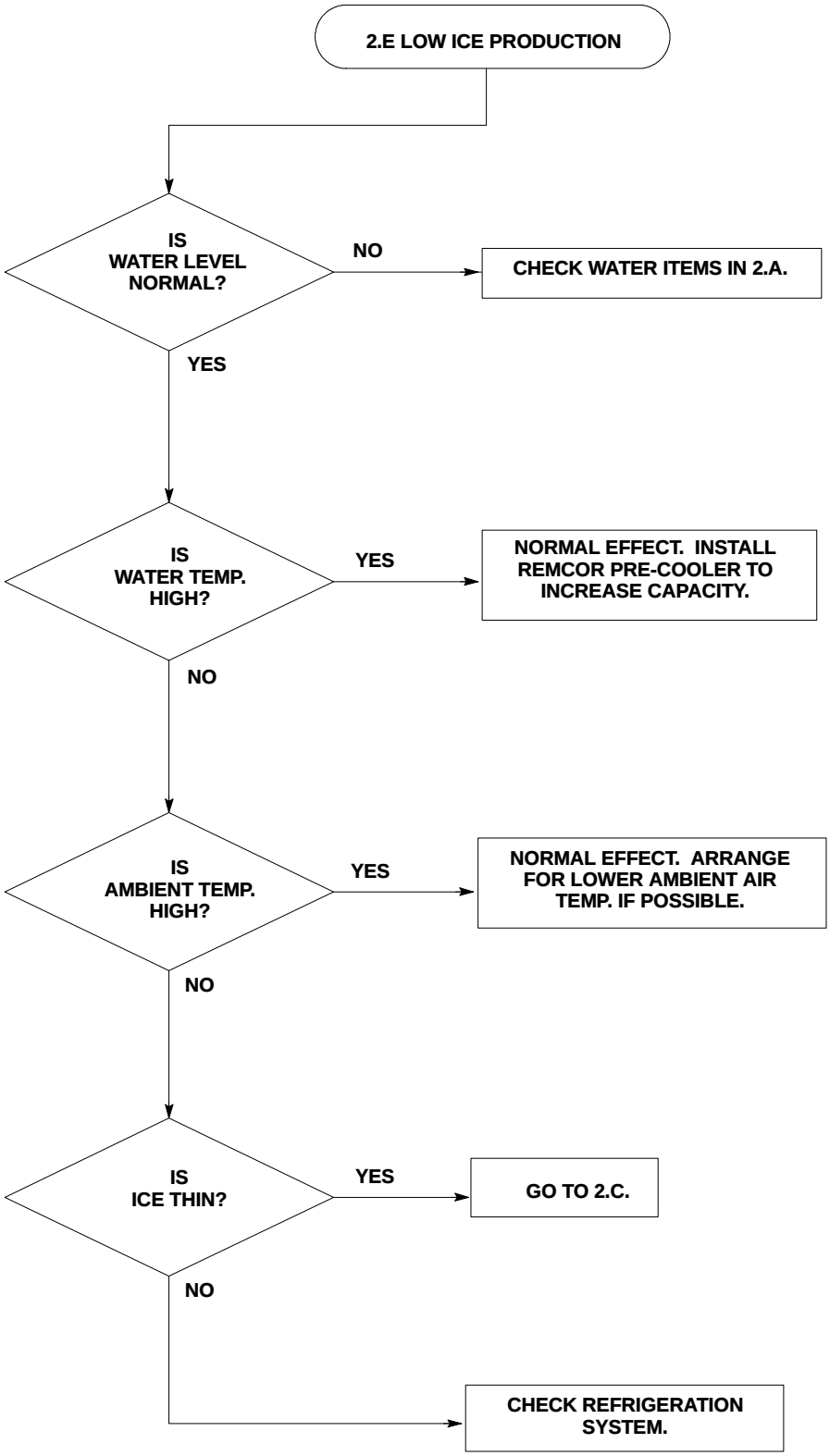

2.A ICE MAKER PROBLEM
RUN/STOP SWITCH?
RUN
STOP
PUT SWITCH IN RUN POSITION.
IS HOPPER FULL?
YES
NO
NORMAL SHUTOFF ON BIN THERMOSTAT.
IS BIN THERMOSTAT OPEN?
YES
NO
1. CHECK THERMOSTAT ADJUSTMENT.
2. REPLACE BIN THERMOSTAT.
IS HIGH-PRESSURE SWITCH OPEN?
NO
YES
IS LOW-PRESSURE SWITCH OPEN?
YES
NO
CHECK FOR LOOSE CONNECTION OR BROKEN WIRE.
IS WATER LEVEL NORMAL IN EVAP.?
YES
NO
1. CHECK THAT WATER SUPPLY IS OPEN.
2. CHECK WATER SUPPLY FILTER.
3. CHECK FOR PLUGGED WATER FLOAT VALVE.
4. CHECK ADJUSTMENT OF TIMER CAM #4. (WATER DUMP)
5. CHECK TIMER SWITCH #4.
6. CHECK IF WATER DUMP VALVE IS STUCK OPEN.
AIR-COOLED UNITS
1. CHECK FOR RESTRICTED AIR FLOW AT TOP OR REAR OF UNIT.
2. CHECK FOR HOT AIR RECIRCULATING TO TOP INLET. ELIMINATE BY BAFFLING.
3. CHECK FOR DIRTY INLET AIR FILTER.
4. CHECK FOR DIRTY AIR-COOLED CONDENSER.
5. CHECK CONDENSER FAN MOTOR.
6. CHECK FOR REFRIGERANT OVER-CHARGE.
WATER-COOLED UNITS
1. CHECK WATER SUPPLY TO CONDENSER.
2. CHECK FOR FAULTY WATER REGULATOR VALVE.
3. CHECK FOR REFRIGERANT OVER-CHARGE.
4. CHECK FOR FOULED CONDENSER.
1. CHECK FOR REFRIGERANT UNDER-CHARGE.
2. CHECK TXV VALVE.

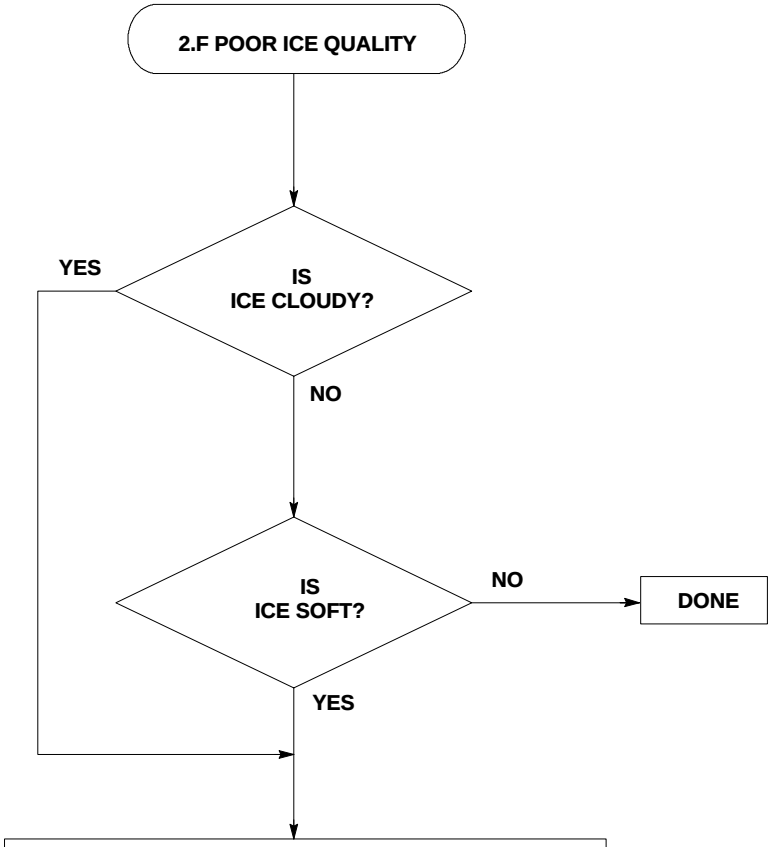

2.B COMPRESSOR INOPERATIVE
IS LINE VOLTAGE WITHIN 10% OF NAMEPLATE VOLTAGE?
YES
NO
CHECK VOLTAGE PROBLEMS IN (1) .
IS THERMAL PROTECTOR OPEN?
NO
YES
IS CONTACTOR PULLED IN?
YES
NO
IS COMPRESSOR BODY COLD?
YES
NO
1. CHECK FOR LOOSE OR BROKEN WIRING CONNECTION IN COMPRESSOR POWER CIRCUIT.
2. CHECK CONTACTOR.
3. CHECK STARTING RELAY.
4. CHECK CAPACITOR(S).
5. CHECK COMPRESSOR MOTOR.
REPLACE THERMAL PROTECTOR.
IS 120V. PRESENT AT CONTACTOR COIL TERMINAL?
YES
NO
REPLACE CONTACTOR.
1. CHECK FOR LOOSE OR BROKEN WIRING CONNECTION IN CONTROL CIRCUIT.
2. GO TO (2.A)

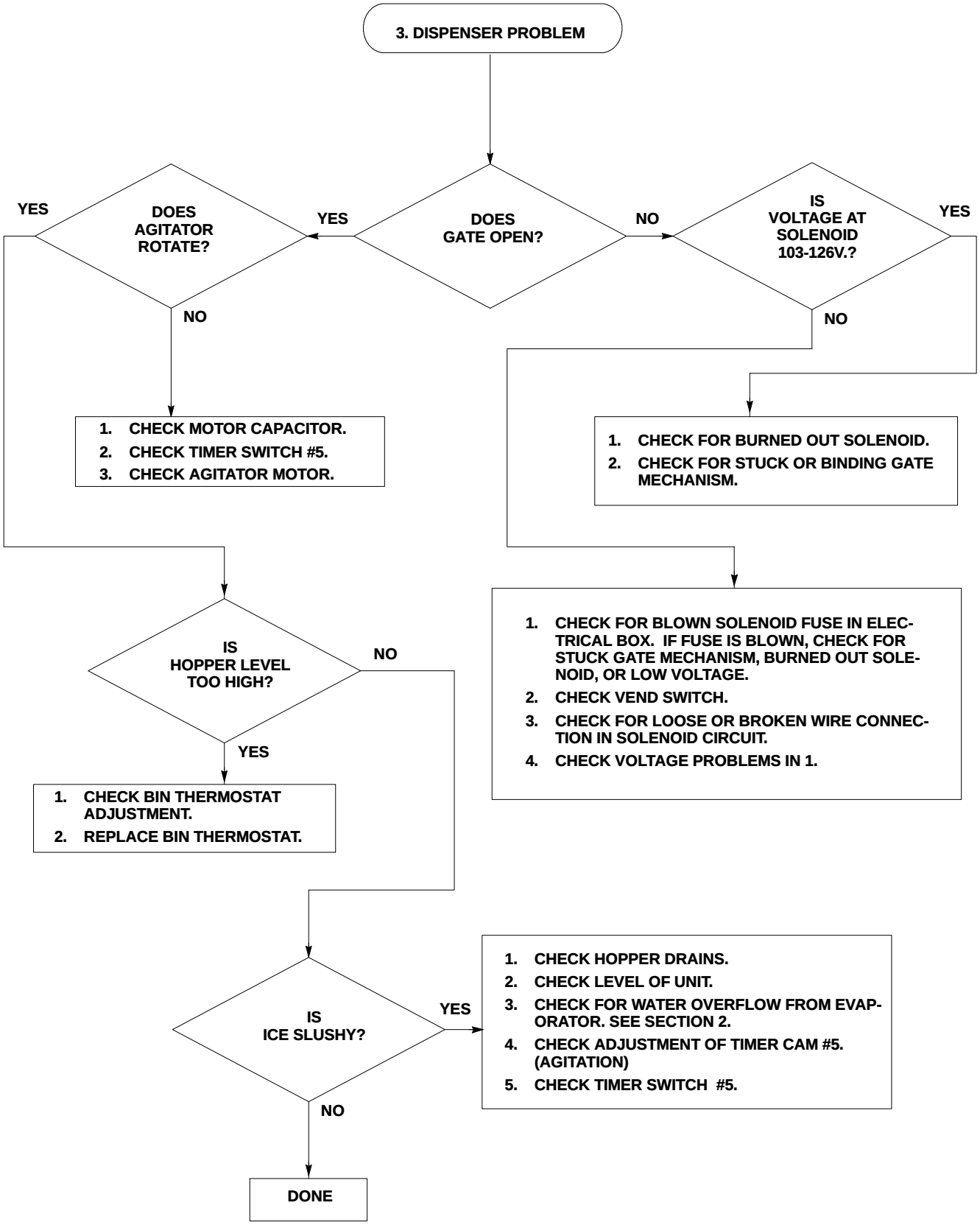

2.C NO ICE ON EVAPORATOR
IS EVAPORATOR COLD?
YES
NO
IS HARVEST TIMER RUNNING?
NO
YES
IS WATER LEVEL NORMAL?
NO
YES
CHECK WATER PROBLEMS IN 2.A
CHECK REFRIGERATION SYSTEM.
IS HOT GAS SOLENOID ENERGIZED?
YES
NO
1. CHECK FOR REFRIGERANT UNDER-CHARGE.
2. CHECK HOT GAS SOLENOID FOR LEAKING SEAT.
3. GO TO 2.A.
IS COND. CONTROL ENERGIZED?
YES
NO
CHECK TIMER SWITCH #1.
1. CHECK FOR OPEN CONDUCT PROBE WIRING.
2. CHECK CONDUCTIVITY CONTROL.
IS HARVEST TIMER HOME?
YES
NO
1. CHECK ADJUSTMENT OF TIMER CAM #2. (HOT GAS)
2. CHECK TIMER SWITCH #2.
1. CHECK ADJUSTMENT OF TIMER CAM #1. (TIMER HOME)
2. CHECK TIMER SWITCH #1.
3. CHECK TIMER MOTOR.

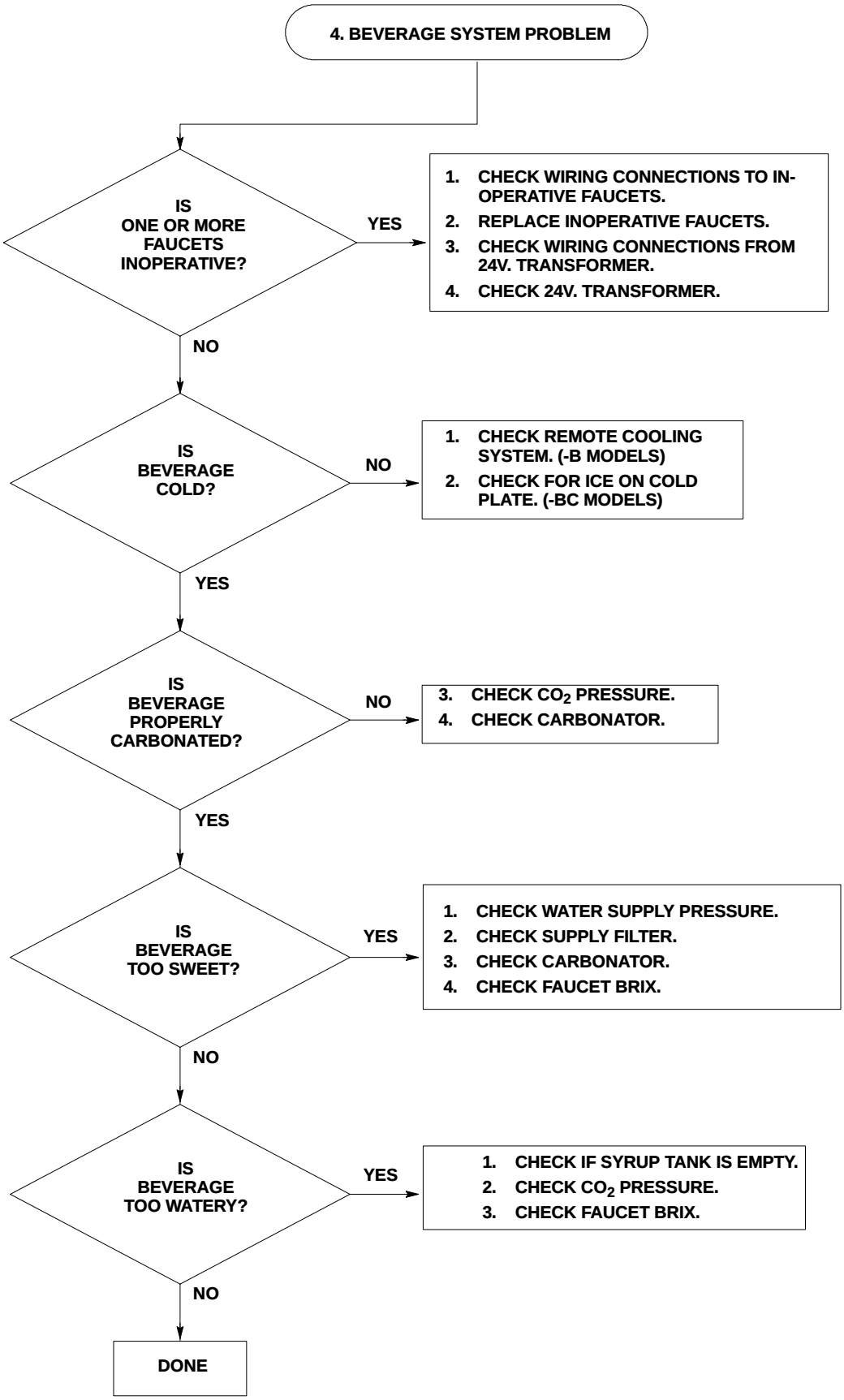

2.D FROZEN EVAPORATOR
1. SHUTOFF ICE MAKER AND THAW EVAPORATOR.
2. START ICE MAKER.
IS AMBIENT ABOVE 60 F?
NO
1. ARRANGE TO MAINTAIN MINIMUM 60 F AMBIENT.
2. CONDUCT FACTORY REGARDING SPECIAL APPLICATION.
YES
IS VOLTAGE WITHIN 10%?
NO
CHECK VOLTAGE ITEMS IN 1.
YES
DISCONNECT PROBE WIRE FROM CONDUCTIVITY CONTROL.
DOES TIMER START?
NO
1. CHECK TIMER MOTOR.
2. CHECK CONDUCTIVITY CONTROL.
YES
HOT GAS OPERATION O.K.?
NO
1. CHECK ADJUSTMENT OF TIMER CAM #2. (HOT GAS)
2. CHECK TIMER SWITCH #2.
3. CHECK HOT GAS SOLENOID.
YES
WATER DUMP O.K.?
NO
1. CHECK ADJUSTMENT OF TIMER CAM #4. (WATER DUMP)
2. CHECK TIMER SWITCH #4.
3. CHECK DUMP SOLENOID.
YES
HARVEST MOTOR OPERATION NORMAL?
NO
YES


2.D (CONT'D)
YES
NO
1. CHECK ADJUSTMENT OF TIMER CAM #3. (HARVEST MOTOR)
2. CHECK TIMER SWITCH #3.
3. CHECK HARVEST MOTOR CAPACITOR.
4. CHECK HARVEST MOTOR.
REPLACE PROBE WIRE ON CONDUCTIVITY CONTROL DURING HARVEST CYCLE.
DOES TIMER RETURN HOME?
NO
1. CHECK ADJUSTMENT OF TIMER CAM #1. (TIMER HOME)
2. CHECK TIMER SWITCH #1.
YES
WAIT ONE FULL FREEZING CYCLE (APPROX. 6-10 MIN.)
DOES HARVEST INITIATE?
NO
1. CHECK PROBE WIRING FOR SHORTED CONNECTION.
2. CHECK CONDUCTIVITY CONTROL.
YES
DOES ICE HARVEST NORMALLY?
NO
1. REPEAT PREVIOUS CHECK OF OPERATION OF HARVEST COMPONENTS IN 2.D.
2. ADJUST ICE THICKNESS PROBE ONLY AFTER ALL OTHER FACTORS HAVE BEEN CHECKED THOROUGHLY.
YES
DONE


2.E LOW ICE PRODUCTION
IS WATER LEVEL NORMAL?
NO
CHECK WATER ITEMS IN 2.A.
YES
IS WATER TEMP. HIGH?
YES
NORMAL EFFECT. INSTALL REMCOR PRE-COOLER TO INCREASE CAPACITY.
NO
IS AMBIENT TEMP. HIGH?
YES
NORMAL EFFECT. ARRANGE FOR LOWER AMBIENT AIR TEMP. IF POSSIBLE.
NO
IS ICE THIN?
YES
GO TO 2.C.
NO
CHECK REFRIGERATION SYSTEM.


2.F POOR ICE QUALITY
IS
ICE CLOUDY?
YES
NO
IS
ICE SOFT?
NO
DONE
YES
1. CHECK AIR PUMP.
2. CHECK ADJUSTMENT OF TIMER CAM #4. (WATER PUMP)
3. CHECK TIMER SWITCH #4.
4. CHECK WATER DUMP VALVE.
5. CHECK WATER FILTER.
6. INCREASE WATER DUMP BY ADJUSTING TIMER CAM #4.
7. INSTALL ADDITIONAL WATER TREATMENT DEVICES FOR SPECIFIC PROBLEM WATER.


3. DISPENSER PROBLEM
DOES GATE OPEN?
YES
NO
DOES AGITATOR ROTATE?
YES
NO
IS VOLTAGE AT SOLENOID 103-126V.?
YES
NO
1. CHECK MOTOR CAPACITOR.
2. CHECK TIMER SWITCH #5.
3. CHECK AGITATOR MOTOR.
1. CHECK FOR BURNED OUT SOLENOID.
2. CHECK FOR STUCK OR BINDING GATE MECHANISM.
1. CHECK FOR BLOWN SOLENOID FUSE IN ELECTRICAL BOX. IF FUSE IS BLOWN, CHECK FOR STUCK GATE MECHANISM, BURNED OUT SOLENOID, OR LOW VOLTAGE.
2. CHECK VEND SWITCH.
3. CHECK FOR LOOSE OR BROKEN WIRE CONNECTION IN SOLENOID CIRCUIT.
4. CHECK VOLTAGE PROBLEMS IN 1.
IS HOPPER LEVEL TOO HIGH?
NO
YES
1. CHECK BIN THERMOSTAT ADJUSTMENT.
2. REPLACE BIN THERMOSTAT.
IS ICE SLUSHY?
YES
NO
1. CHECK HOPPER DRAINS.
2. CHECK LEVEL OF UNIT.
3. CHECK FOR WATER OVERFLOW FROM EVAPORATOR. SEE SECTION 2.
4. CHECK ADJUSTMENT OF TIMER CAM #5. (AGITATION)
5. CHECK TIMER SWITCH #5.
DONE


4. BEVERAGE SYSTEM PROBLEM
IS ONE OR MORE FAUCETS INOPERATIVE?
YES
1. CHECK WIRING CONNECTIONS TO IN-OPERATIVE FAUCETS.
2. REPLACE INOPERATIVE FAUCETS.
3. CHECK WIRING CONNECTIONS FROM 24V. TRANSFORMER.
4. CHECK 24V. TRANSFORMER.
NO
IS BEVERAGE COLD?
NO
1. CHECK REMOTE COOLING SYSTEM. (-B MODELS)
2. CHECK FOR ICE ON COLD PLATE. (-BC MODELS)
YES
IS BEVERAGE PROPERLY CARBONATED?
NO
3. CHECK CO_2 PRESSURE.
4. CHECK CARBONATOR.
YES
IS BEVERAGE TOO SWEET?
YES
1. CHECK WATER SUPPLY PRESSURE.
2. CHECK SUPPLY FILTER.
3. CHECK CARBONATOR.
4. CHECK FAUCET BRIX.
NO
IS BEVERAGE TOO WATERY?
YES
1. CHECK IF SYRUP TANK IS EMPTY.
2. CHECK CO_2 PRESSURE.
3. CHECK FAUCET BRIX.
NO
DONE

MAINTENANCE/ADJUSTMENT PROCEDURES

THERMOSTAT ALTITUDE ADJUSTMENTS

IMPORTANT: Adjust the bin thermostat setting only if storage hopper over fill is a problem.

BIN THERMOSTAT

1. Open the hinged service door.
2. The adjustment screw is located below the "Flush" switch on the left side of the electrical box.
3. For altitudes up to 6,000 feet, turn the adjustment screw COUNTERCLOCKWISE as follows:

ELEVATION (FEET)	COUNTERCLOCKWISE TURN
2,000	1/13
4,000	1/6
6,000	1/4

4. For altitudes above 6,000 feet, consult the factory.

ICE THICKNESS ADJUSTMENT

WARNING: Do not adjust ice thickness probe unless all other problem causes have been evaluated.

1. Open the hinged service door on the upper left side panel and remove the ice drop and hopper covers.
2. Collect and weigh the ice produced during the harvest cycle. The amount of ice harvested should weigh approximately 3 pounds. Use the following procedure to adjust the probe to obtain this weight. (A clockwise adjustment will reduce the harvest weight while counterclockwise turns will increase the amount.)

CAUTION: Do not turn the screw on the end of the probe. Rotate the plastic probe body only using a 3/8 inch open end wrench. Make adjustments in 1/8 inch turn increments.

   A. Place the "Stop/Run" switch in the "Stop" position. (If unit is in the ice making cycle, stop the unit at the end of the harvest cycle).

   B. Access to the probe is obtained by removing the rear service panel. (For units without beverage faucets, the probe can be adjusted from the front by removing the lower front panel if rear access is blocked).

   C. Adjust the probe.

   D. Place the "Stop/Run" switch in the "Run" position.

   E. Collect and weigh the ice harvested. Repeat step A through E as necessary to obtain the required amount of ice.

3. In making an initial adjustment (for example, if the probe has been removed and replaced for any reason), turn probe clockwise until it just touches the evaporator coil (a slight back pressure will be felt). Turn probe counterclockwise 2-1/2 turns. Follow procedure in step 2 to obtain the required ice harvest weight.

CLEANING/REPLACE THE FILTER

1. Remove the filter from the cabinet panel by sliding it forward toward the front of the unit.
2. Wash the filter in a solution of warm water and a mild detergent. Do not use caustic detergents as they may attack the aluminum filter elements.
3. Dry filter thoroughly.
4. For maximum effectiveness, reactivate the filter with an air filter coating (see Parts List, Miscellaneous Components).

CLEANING THE CONDENSER

Air-Cooled Units.

1. Disconnect power to the unit.
2. Remove the upper front and right side panel.
3. Remove all dirt/foreign material built up from the condenser fins (fan side). Be careful not to damage the fins. It is recommended that a power vacuum cleaner with a "crevice" tool attachment be used.

CLEARING EVAPORATOR FREEZE-UP

WARNING: To prevent possible injury, do not place fingers or hand into ice maker nozzle or hopper with power applied to the unit.

1. Open the hinged service door on the upper left side panel.
2. Place the "Stop/Run" switch in the "Stop" position.
3. Close the water supply valve to the ice maker.
4. Remove the ice drop and hopper covers.
5. Depress the "Flush" switch push button and drain the evaporator.
6. Pour hot water into the evaporator ice exit opening. It will be necessary to use either a funnel or a container with a spout. Fill the evaporator completely.
7. Drain the evaporator. Repeat steps 5 and 6 as required to ensure that all the ice in the evaporator is melted.
8. Open the water supply valve. Depress the fill switch and refill evaporator.
9. Replace the ice drop and hopper covers.
10. Consult **TROUBLESHOOTING GUIDE** to determine cause of freeze-up before putting unit back in service.

HARVEST TIME ADJUSTMENT

WARNING: Disconnect electrical power to the unit before servicing the timer in the electrical box.

1. Disconnect power to ice maker.
2. Remove upper front panel and electrical control box cover.
3. Place the "Stop/Run" switch in the "Stop" position.
4. Using Figure 9 as a guide, set the timer cam tabs as follows, starting with cam wheel No.1 (all cam tab positions are in relation to No.1 left cam tab).

NOTE: Timer cam wheels can be manually rotated only in the normal direction of rotation-downward as viewed from the front of the unit.

A. "Manually" adjust the cam tabs by using each "click" as the cam tab is rotated, as equivalent to .75 seconds.

B. Set up cam wheel No.1 with the left and right cam tabs back-to-back as shown in Figure 9A.

C. Adjust the cam tabs on wheels No. 2 through No. 5 in sequence as shown on the chart. Rotate the cam wheels manually downward to set each wheel.

D. After the cam tabs are manually set, reconnect power to the ice maker.

E. Rotate the cam wheels slightly to activate the timer motor (No. 1 tell-tale down).

F. Using a stop watch, time the cam switch tell-tales. Adjust the cam tabs as necessary for the required cycle times.

MANUAL FILLING

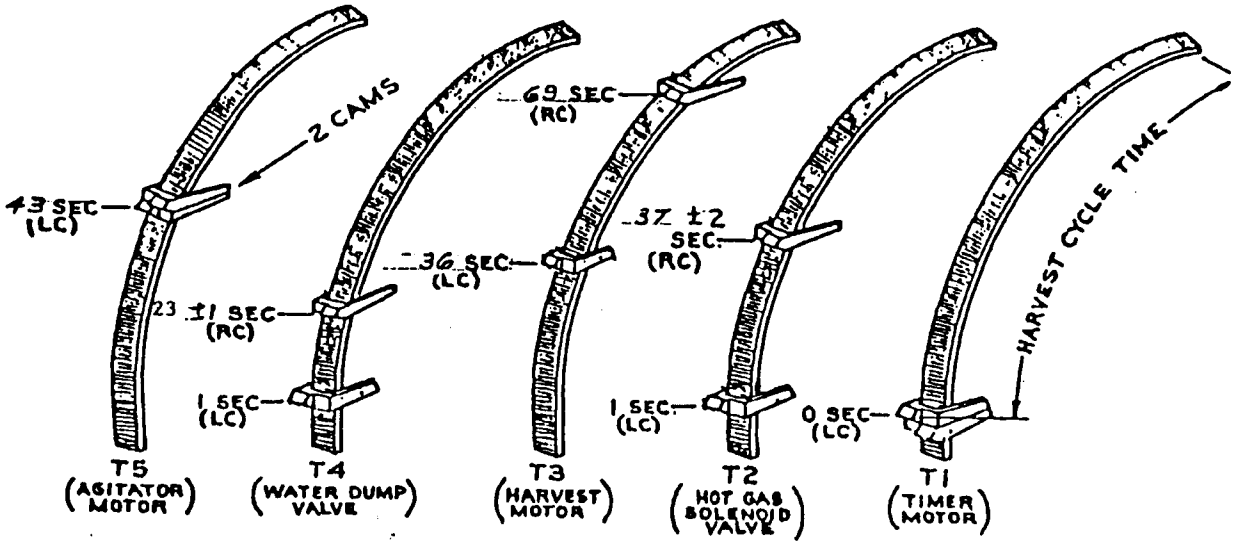
In the event that the ice maker is not functioning, the hopper may be manually filled with ice.

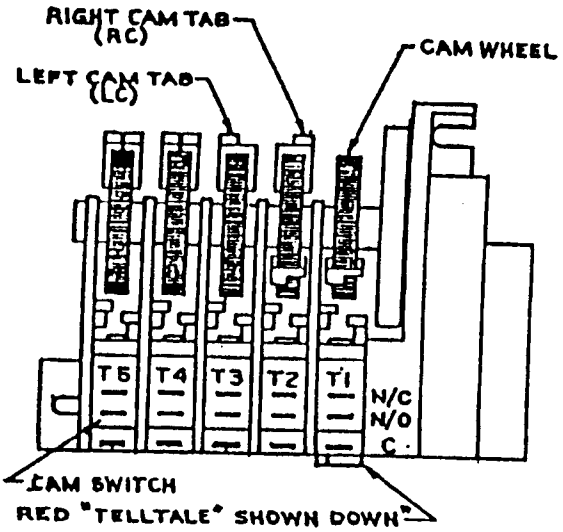
1. Open the hinged service door.
2. Place the "Stop/Run" switch in the "Stop" position.

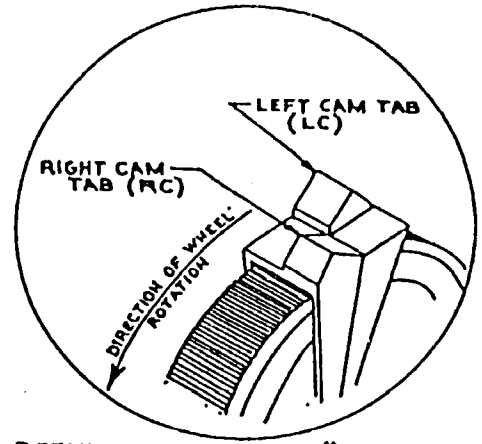
WARNING: Electrical power is <u>on</u> to the agitator motor and the gate solenoid. Avoid contact with these components.

3. Remove the ice drop and storage hopper covers.
4. Fill hopper with ice and replace covers. Unit is now ready for dispensing.

CAUTION: Do not use crushed or flaked ice. Use of bagged ice, which has frozen into large chunks, <u>can void warranty</u>. The agitator is not designed to be an ice crusher. Use of large chunks of ice which "jam up" inside the hopper will cause failure of the agitator motor and damage the hopper. If bagged ice is used, it must be <u>carefully</u> and <u>completely</u> broken into small, cube-size pieces before filling into the storage hopper. Do not allow foreign material to enter the ice storage hopper.







DETAIL OF CAM WHEEL "T1

FIG. 9A

FIGURE 9. HARVEST TIMER

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PARTS LIST

DESCRIPTION	PART NUMBERS			
	Air Cooled		Water Cooled	
Dispenser Components	**80**	**80 "BC"**	**80**	**80 "BC"**
Gate Slide	21491	21491	21491	21491
Depressor Retainer	22644	22644	22644	22644
Agitator	22855	22855	22855	22855
Vend Switch	30895	30895	30895	30895
Switch Boot	31007	31007	31007	31007
Agitator Motor with Gasket	31889	31889	31889	31889
Agitator Motor Shaft Seal	50454	50454	50454	50454
Agitator Motor Plate Insulation	50842	50842	50842	50842
Sink	51180	51181	51180	51181
Sink Grill	70530	70530	70530	70530
Ice Chute, Back Section	53015	53015	53015	53015
Ice Chute Cover	53016	53016	53016	53016
Gate Gasket	50770	50770	50770	50770
Gate Solenoid Assembly	31093	31093	31093	31093
Gate Rebuilding Kit	70438	70438	70438	70438
Agitator Motor Heater	–––––	30794	–––––	30794
Agitator Motor Gasket	50806	50806	50806	50806

DESCRIPTION	PART NUMBERS			
	Air Cooled		Water Cooled	
Electrical Controls	**80**	**80 "BC"**	**80**	**80 "BC"**
Contactor	30379	30379	30379	30379
Toggle Switch	30385	30385	30385	30385
Capacitor, Agitator Motor	30774	30774	30774	30774
Flush Switch	30895	30895	30895	30895
Bin Thermostat	31001	31001	31001	31001
Fuse, 1-1/4 Amps (Gate Solenoid)	31406	31406	31406	31406
Timer, Harvest	31838	31838	31838	31838
Conductivity Control	31579	31579	31579	31579
Capacitor, Harvest Motor	31673	31673	31673	31673
Compressor Start Relay	31874	31874	31874	31874
Capacitor, Compressor Start	31728	31728	31728	31728
Capacitor, Compressor Run	31875	31875	31875	31875
Compressor Overload	32971	32971	32971	32971
High Pressure Control	60501	60501	60501	60501
Low Pressure Control	60369	60369	60369	60369
Transformer, Beverage	31091	31091	31091	31091
Transformer, Control	31138	31138	31138	31138

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PARTS LIST (CONT'D)

DESCRIPTION	PART NUMBERS			
	Air Cooled		Water Cooled	
Refrigeration Components	**80**	**80 "BC"**	**80**	**80 "BC"**
Compressor	60725	60725	60725	60725
Compressor Mounting Kit	31607	31607	31607	31607
Air Pump	31568	31568	31568	31568
Hose Adaptor, 3/8 NPT X 3/8 Barb	51189	51189	51189	51189
Hose Adaptor 90 , 3/8 NPT X 3/8 Barb	51190	51190	51190	51190
Condenser Fan Motor	31738	31738	–––––	–––––
Condenser Fan Blade	31844	31844	–––––	–––––
Float and Tank Assembly	40527	40527	40527	40527
Condenser Air-Cooled	60619	60619	–––––	–––––
Condenser Shroud	51434	51434	–––––	–––––
Tinnerman Clip, Shroud	70704	70704	–––––	–––––
Filter (Drier)	60623	60623	60623	60623
Hot Gas Solenoid Valve	60620	60620	60620	60620
Hot Gas Solenoid Coil (115 Volt)	32576	32576	32576	32576
TXV R-502	60947	60947	60947	60947
Condenser, Water Cooled	–––––	–––––	60933	60933
Water Drain Valve	40652	40652	40652	40652
Tubing, Water Drain, 1/2 inch I.D.	50351	50351	50351	50351
Tubing, Air Pump, 3/8 inch I.D.	50096	50096	50096	50096

DESCRIPTION	PART NUMBERS			
	Air Cooled		Water Cooled	
Evaporator Components	**80**	**80 "BC"**	**80**	**80 "BC"**
Evaporator Assembly	60698	60698	60698	60698
Evaporator Housing, Foamed	51416	51416	51416	51416
Harvest Bar	51423	51423	51423	51423
Gasket Kit (Evaporator)	51356	51356	51356	51356
Ice Thickness Probe	51179	51179	51179	51179
Harvest Motor With Gaskets	31560–1	31560–1	31560–1	31560–1
Hose Adaptor, 1/4 NPT X 3/8 Barb	51191	51191	51191	51191
Hose Adaptor, 1/4 NPT X 1/2 Barb	51192	51192	51192	51192
Harvest Motor Mounting Screw	70541	70541	70541	70541
Evaporator Cleaning Plug	51300	51300	51300	51300

	Air Cooled		Water Cooled	
Miscellaneous Components	**80**	**80 "BC"**	**80**	**80 "BC"**
Filter (after S/N 1026)	70542	70542	70542	70542
Label "Press For Ice"	90848	90848	90848	90848
Wiring Diagram	91703	91703	91703	91703
Manual	91704	91704	91704	91704
Cleaning Label	90900	90900	90900	90900

IMI CORNELIUS INC.
ONE CORNELIUS PLACE
ANOKA, MN. 55303–6234
TELEPHONE (800) 238–3600
FACSIMILE (612) 422–3232
TECH SVC 1-800-535-4240

WARRANTY

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IMI Cornelius Offices

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